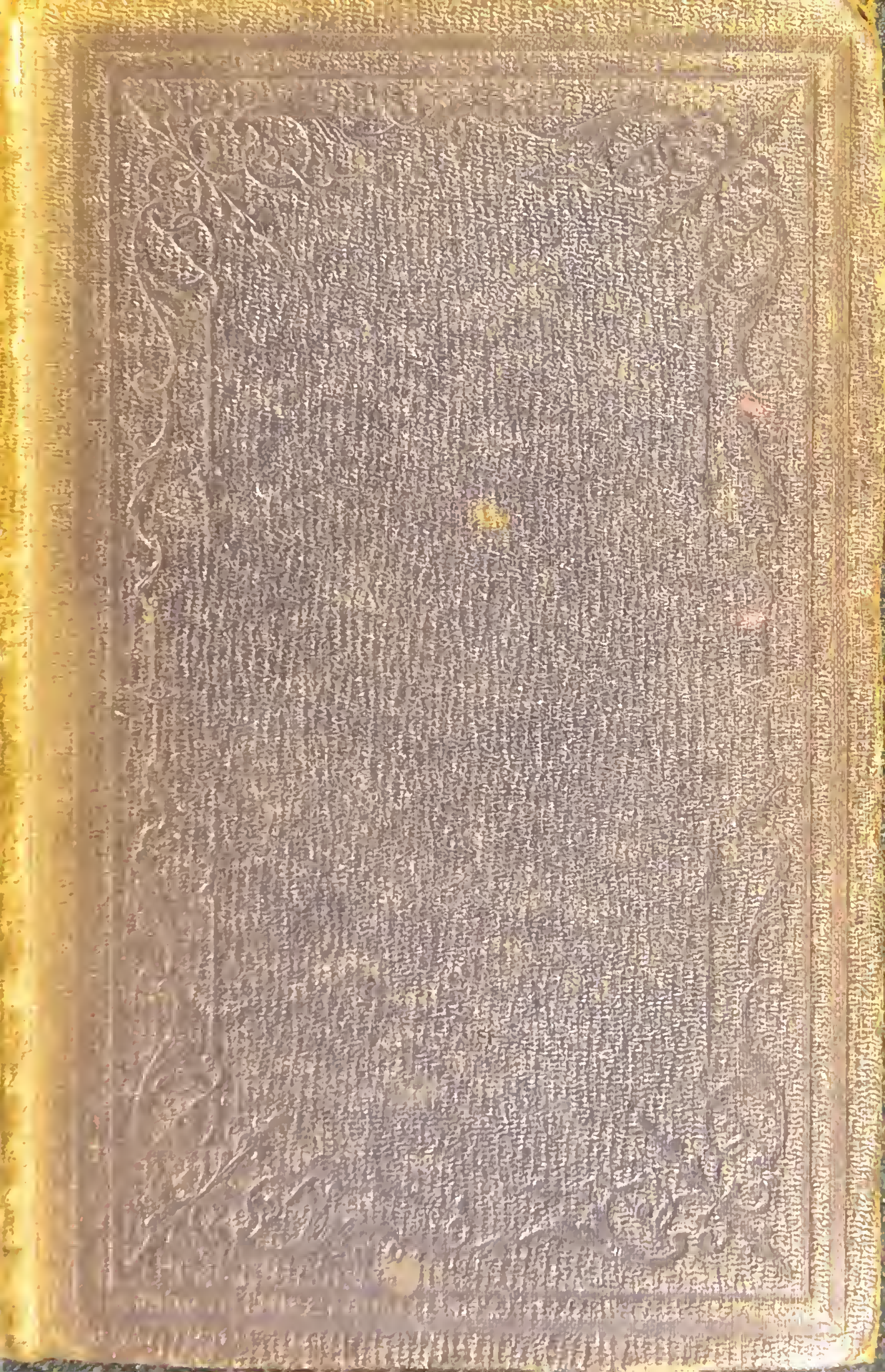

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THE WATER CURE

IN

CHRONIC DISEASE.

"He told the hidden power of springs,
And Disease drank and slept."

SHELLEY—*Prometheus Unbound.*

Es war nur Waſſer—doch dem halb erſtorbenen Sinn
Scheint Lebensgeiſt den Gaum hinab zu fließen,
Däucht jeder Zug herzſtärkender als Wein,
Und süß wie Milch, und sanft wie Oel zu seyn;
Es hat die Kraft zu speiſen und zu tränken
Und alles Leiden in Vergeſſenheit zu senken.

WIELAND—*Oberon.*

87968

THE
WATER CURE
IN
CHRONIC DISEASE:

An Exposition

OF THE CAUSES, PROGRESS, AND TERMINATIONS OF VARIOUS
CHRONIC DISEASES OF THE DIGESTIVE ORGANS,
LUNGS, NERVES, LIMBS, AND SKIN;
AND OF THEIR TREATMENT BY WATER,
AND OTHER HYGIENIC MEANS.

BY

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PREFACE

TO THE FIRST EDITION.

EVERY writer supposes that his work is to supply some want. My object in publishing this treatise, is to afford a truthful and rational exposition of the value of the water-treatment in certain chronic diseases. I apprehend that it is wanted, because the works on the subject of the water cure which have hitherto appeared in this country contain, so far as my experience informs me, much over-statement as to its operation, and are moreover written rather to catch the hopeful invalid, than to enlighten him as to the nature of his disease, or the mode in which the water plan is to relieve it. From this remark I except the work of Dr. E. JOHNSON, entitled "Hydropathy," wherein the manner in which the water cure operates on the chemistry of the living body is very ably traced. The other works have not the slightest claim to be called scientific.

In the First Part of this work, the origin, progress, extension, and terminations of Chronic Disease in general, are delineated and explained, and one general deduction from the facts made—namely, that no disease becomes chronic unless the central organs of nutrition are affected.

In the Second Part, this is further developed in the history of individual chronic diseases, the explanation of the pathology and symptoms of each of which is given, and also of the reasons for the water-treatment applicable to each. In arranging the diseases, those are first treated of which affect the primary organs of nutrition, the organs in which the first step in bloodmaking from food, and therefore of nutrition, is taken. The next step of blood-making being affected by the lungs and heart, their maladies are then treated of. The circulation of the perfected blood being under the control of the nervous system, the diseases of that system come the next in order. One portion of the general nervous system—namely, the brain and spinal cord and their nerves, having control over the locomotive organs, the diseases of the limbs come the next in order to be treated of. Finally, the blood having been made and circulated, certain elements of it are thrown off in the shape of secretions from the bowels, kidneys, and skin—the diseases of which are the last to be mentioned. The whole arrangement of these individual maladies is thus strictly physiological, beginning with the formation of blood, and ending with the excretion of its useless portions.

Part Third treats, in the first place, of the mode in which the water cure operates in producing its beneficial results, the rationale being given under twelve sections. The subject is treated generally, as that of Chronic Disease was in the First Part. But, in the second place, the details of the water cure are brought forward, the rationale of each process given, and the circumstances which regulate their application stated.

Throughout the volume, the great pathological fact of the existence of visceral disorder in all chronic disease, is kept in view; and the attentive reader will find that, from beginning to end, it forms the base of the practice recommended, and of its explanation.

The Appendix contains facts and arguments in answer to certain accusations brought orally against the water-treatment, chiefly by medical men, although none has ever yet ventured to print them. This portion of the volume is a reprint from a former work of mine.

I put this work forward as an attempt in the right way of handling the subject of the water cure, with a hope that it will be carried out by more able observers and writers. Until it is treated gravely, earnestly, and *truthfully*, as a matter of scientific importance, it never will obtain the footing in the opinion of the public which it ought to have; for in this land of thinking heads, nothing *endures* unless it addresses itself to the sober thought.

The cases recounted were all treated by me at Malvern; and, altogether, what I have stated is of my own experience in an extensive field of practical observation during four years of a busy professional life at that place.

J. M. G.

MALVERN, *September* 20*th*, 1846.

PREFACE

TO THE SECOND EDITION.

WITHIN nine months from the publication of the first edition of this work, another one has become necessary. A large edition has also been printed and sold in America. Books on medical subjects do not frequently meet with so much good fortune. I believe it to be attributable, in the present instance, to the growing interest of the community in the subject of which this volume treats; and also to the fulfilment of my resolution to speak fairly, not flatteringly, of the water cure. I have, further, abundant reason to know that the exposition it contains of the manner in which that mode of treatment produces its results has been instrumental in removing the prejudices of many non-professional, and not a few medical readers. On these several accounts it appears desirable to issue the present edition. It is well in all legitimate ways to leaven the ignorance and prejudice which exist on the water treatment with reasonable views and explanations of its principles, its powers, and its application.

To the ample First Edition but little has been added in the present one. Facts of recent observation are scattered in various parts of the pages, but are too numerous and too brief to be designated in a preface; they are chiefly in the Third Part. The Second Part contains some additional cases and elucidations of disease.

The ceaseless exigencies of medical practice have retarded the completion of this edition beyond the ordinary period for similar reproductions. I have no other and need no more sufficient apology for the many inquiries concerning it at the publisher's.

My hope is, that this book may open the eyes of all who read it, to the destructive tendency of the drugging and unnatural stimulation on which such numbers of the English public maintain a feverish vitality for a few years, to sink at last into the condition of hopeless valetudinarians. The past history and present state of many such who are under my observation are perfectly terrific. It is no affectation to say that my mind has been oppressed, weighed down, by accounts which invalids have given of the process by which they became the shattered beings they are; a process almost invariably including years of monstrous drugging and its unvarying accompaniment, intense suffering of mind and body. Most sincerely do I hope that these pages may be the means of effectual warning from that destroying plan of treatment, even though they should fail to establish the more rational system which they profess to teach. But almost every case of every practitioner of the Water Cure is establishing it daily on a broader and deeper basis; and the once most sceptical are now obliged to acknowledge that, at the least, it is a vast addition to the remedial art.

J. M. G.

MALVERN, *September* 20*th*, 1847.

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PART I.

OF CHRONIC DISEASE IN GENERAL.

CHAPTER I.

PRELIMINARY.

Nomenclature of chronic disease—Phases between that and acute disease—Acute disease always precedes chronic—Arrangement of the subjects to be treated.

The epithet "chronic" is given by medical men to diseases whose duration passes a certain limit of time; and that limit has been fixed at forty days. All within this period are generally designated as "acute;" but as this would form but two extreme classes of disease, whilst Nature exhibits several intermediate phases, some writers have subdivided the "acute" diseases into the *most acute*, when they terminate in three or four days—into the *very acute*, when they do not continue longer than seven days,—into the *simply acute*, when they endure for fourteen days—and into the *sub-acute* when they reach forty days.

It will be plain, however, that these are merely arbitrary terms, of which there are far too many in medicine, since they are apt to be taken by the young or by the *routinier* as guides in practice; and thus *names*, instead of *conditions of body*, come to be treated, and much mischief to be consequently perpetrated. Now, the term "chronic" has in itself no reference whatever to the actual state of the diseased frame; and if I employ it in this Essay, it is only that I may explain it, and fix some meaning to it as regards that state—the word being, in other respects, convenient and precise enough.

Every disease is, in its onsetting, *acute;* that is to say, the symptoms are intense, pressing in character, and if Nature, either with or without the aid of Art, does not soon bring relief, extinguishes the individual.

The relief and the escape from death are brought about either by transfer of the morbid action from the original seat of disorder to some less important part, and the elimination of some secretions therefrom—an action to which the term *crisis* has for three thousand years been applied;* or, no such transfer occurring, the acute state of disease in the affected part passes into the chronic state—chronic disease is established.

Preliminary, therefore, to fixing what constitutes chronic disorder, it is necessary that we should obtain some precise idea of what constitutes the acute form. I shall next proceed to inquire into the minute changes of organs which induce the phenomena of chronic disease. All the circumstances of chronic disease, generally, will then be considered. Applications of the general doctrine and circumstances will then be made to individual diseases. In the course of these inquiries, I shall take occasion to show how acute disease is originated, and chronic disease maintained and exasperated by internal stimulation. And finally, I shall show how the treatment of chronic disease by water, and other hygienic means, obviates this inconvenience, is more safe than any other plan of treatment, and comes in aid of the *natural and only permanent* process towards recovery.

---

* It is well to note this, as all the world has of late spoken of a "crisis" as a new prodigy; a mistake which some writers on the water cure would seem to encourage, either from ignorance of the literature of medicine, or from some silly idea that the novelty may add to the *éclat* of the treatment they profess. HIPPOCRATES was the first to use the term *crisis* as applied to a termination of disease, and he lived A.M. 3500.

CHAPTER II.

DOCTRINE OF ACUTE DISEASE.

What is meant by "general disease" and "general debility"—Disease always begins in one organ—The ganglionic system of nerves—Its centre and extensive influence—Control over the blood-vessels—Irritability and sensibility—Action of morbid causes on the irritability of the blood-vessels—Their contraction and exhaustion—Illustrations—Changes in the movement and character of the blood—Periods in the process of acute disease—Its extension—Shown in acute indigestion and simple inflammatory fever—Real cause of death from acute disease.

We are much in the habit of speaking of "general disease:" in truth, there is no such thing. All the organs of the body may give signs of diseased action, but there are invariably one or more parts whose malady originates all that we see.

The brain may evidence disease by impaired mental power, impaired volition, delirium, sleeplessness, &c.; the lungs, by rapid breathing, cough, &c.; the heart, by excessively quickened action; the digestive organs, by dry tongue, thirst, loss of appetite, nausea, constipation, &c.; the kidneys, by diminished secretion; the skin, by unnatural heat and dryness—yet all these multiform diseased actions may, and very often do, depend on a small patch of inflammation in the stomach, perhaps no larger than a half-crown, or even a shilling. To treat all these multiplied symptoms under the name of "general disease," would be mere ignorance or sheer charlatanism, which ever aims at bustling complexity.

So also of "general debility," a term so common and so unmeaning; there is no such thing. Debility *always* signifies the disorder of one or more parts oppressing the healthy functions of the rest of the body. Remove the disorder of those parts (it may be by positively *lowering* remedies), and straightway the "general debility" vanishes. Inflammation of any of the digestive organs very shortly brings down the physical and mental vigour; which as quickly rises when a few flannels wrung out of boiling water, and applied over the abdomen, have removed the internal inflammation. On this head I shall have more to say hereafter.

Disease, then, always commences in some one organ or set of organs, from which it spreads, with more or less rapidity, to others, by a sympathy whose physical agent is the nervous system.

By this term, "nervous system," the brain, spinal cord, and the nerves proceeding from them, are ordinarily understood; but there is another system of nerves, which, as it is neither obedient to the will, nor cognizant of pain, commonly so called, is rarely considered in the explanation of disease; in which it, nevertheless, plays by far the most important—I may say, the only important part. This system of nerves has been called the "ganglionic," from the appearance of small knots or ganglions in the course of the nerves; the "organic," as regulating the character of the organization of parts; the "nutritive," as presiding over the organs that minister to the nutrition of the body; and the "visceral," as pervading and having its centre in the viscera,* that is, in the contents of the chest and abdomen; and I shall use these terms indiscriminately in the course of this Essay. Perhaps the most accurate, however, are the epithets "nutritive," and "organic:" for, wherever there are organs in the body, or wherever nutrition goes on in it, there are nerves of nutrition to be found. Wherever, too, there is a blood-vessel (and we know not of nutrition without blood), organic nerves accompany it and regulate its action. In *every* part of the body, therefore, organic nerves exist, as in *every* part of the body blood-vessels exist: the point of the finest needle cannot be introduced into any tissue of the frame without entering one or more blood-vessels and organic nerves.†

---

* The word *viscus*, of which *viscera* is the plural, signifies in the Latin, slime. And as the older anatomists found the membranes which line the lungs and digestive canal slimy from the mucus they secrete, they applied the characteristic term to the parts themselves, calling each organ of the chest and abdomen, *viscus*, and the general contents, *viscera*. This explanation was necessary, from the frequency with which I shall be compelled to use the term in these pages.

† Ruysch, William Hunter, and Lieberkuhn, asserted that every substance of the animal frame consisted of nothing but vessels.

The brain itself, containing, as it does, so large a proportion of the blood of the body, is, in this view, supplied also with a large proportion of organic nerves.

The coincidence of nutritive blood-vessels (called also capillary) and nutritive nerves points to some strict organic connection between them. In fact, it is the presence of the nerves which imparts to the blood-vessels the property of receiving and reacting upon impressions from agents within or without the body—a property to which the name of "irritability" is given.

Let not the reader confound "irritability" with "sensibility," another property of *a portion* of the body. Irritability exists in the blood-vessels and organic nerves all over the frame—has its central organs in the chest and abdomen—begets no sensation or volition—is ever in action. Sensibility exists in the nerves of the brain and spinal cord only—has its central organs in the brain and spinal cord—begets sensation and volition, and is suspended in sleep. But, on the other hand, sensibility and sensation are built upon irritability and irritation; as thus—the brain is composed of matter deposited from the blood-vessels, and these are regulated in the manner and quality of their deposit by the amount and character of their irritability; therefore, if the irritability be acted on vehemently (as in giving stimulants), the action of the blood-vessels, otherwise called their irritation, is vehement also, and they deposit more than usual of the brain matter, which possesses the property of sensibility, *and in this way augmented sensation is begotten.* It is important to bear this in mind for the future application to the doctrine of chronic disease—*irritation precedes sensation, sensation is built upon irritation.*

The first effect, therefore, of causes of disease—excessive cold or heat, infectious matter, &c.—is upon that nervous system which presides over the capillary or nutritive blood-vessels, and whose central portions are in the viscera of the chest and abdomen—the ganglionic system.

It is ascertained by numerous experiments that the first effect of all kinds of agents upon the nervously endowed capillaries is to produce contraction of them—a diminution of their calibre by the fact of their contraction. In other words, all agents are stimulants to them, and bring them into action, and that action is *contraction.* But as all action is effort, such effort must, in a living body, be succeeded by lassitude and exhaustion; and in the case of these small blood-vessels, *relaxation* and increase of calibre is the evidence of this secondary state; and further, it follows that the amount of relaxation will be in exact proportion to the amount of the previous contraction.

Of course the condition of the blood as to quantity is affected by these two opposite states of the vessels that contain it. When the vessels contract on the application of the morbid stimulus, they drive their contained blood from them; and when relaxation ensues, the blood rushes into their increased calibre; and the amount of blood thus brought into a part will be, of course, in exact proportion with the relaxation, and this with the contraction, of the containing blood-vessels.

To illustrate all this:—I apply water at 35° of Fahrenheit to the back of the hand when it is warm; it first of all drives the blood from the skin, and renders it pale; this is because the cold has stimulated the nutritive nerves of the blood-vessels, and caused them to contract and drive the blood from them; but in a very short time the skin becomes more than usually red, and, if friction be used, hot too. This is because the vessels have been exhausted by the contracting effort, have relaxed, and admitted more blood into them. This is an approach to inflammation of the skin of the hand.

Or take a piece of frozen mercury, the temperature of which is 38° below the zero of Fahrenheit, and apply it on the hand. The stimulus is so violent, the contraction so excessive, as to be *instantaneously* followed by excessive relaxation and total loss of vital power of the blood-vessels, and inflammation of the most destructive kind is produced. The part is burned, in fact, as effectually as if the opposite stimulus of red-hot iron had been applied.

Between these two instances the shades of stimulation and relaxation are infinite, according to the morbific agent applied. The more stimulating the agent, the more rapid and extreme the amount of blood brought to the part, whether that part be the skin of the hand, or the mucous lining of the stomach or lungs.

But whilst such are the conditions of morbid action in the blood-vessels, what changes take place in the blood they contain?

In the first place, its movement through the blood-vessels of the diseased part is retarded, in consequence of the diminished contractile power of those vessels. There is more or less excess and congestion of blood in the part, an excess which obtains at the expense of other and healthy parts. It is the excess which causes the *swelling* of inflamed parts, their *redness*, their *increased heat*, the unusual quantity of blood secreting an unusual quantity of caloric, and their *painfulness*, the pressure of the excessive blood on the surrounding nerves rendering them irritable: although, as I shall have occasion to show hereafter, inflammation of internal parts may exist without pain, in the usual acceptation of the word, and without redness.

In the next place, the chemical changes that go on in the blood undergo modification, in consequence of this excess and retardation of its movement. This is shown by the increased heat already alluded to; and further, if the inflammatory congestion be not relieved, the blood secretes *pus*—the matter of abscess—either in the shape of a collection called an abscess, or the same flows freely from the surface of a mucous membrane, forming a bad kind of expectoration, &c. But the chemical changes in question vary endlessly with the diseased part. In the stomach, there is acid instead of insipid mucus and gastric juice; in the liver there is acrid and dark instead of slightly bitter and yellow bile; from the kidneys, acid instead of alkaline secretion; and so on. The most familiar instance of this as a signal of disease is the state of the tongue when the mucous lining of the stomach is disordered. The variety of the secretions there is endless, and each one corresponds with a certain shade of congestion of blood in the membrane that covers the tongue. Judge, then, how numerous are the shades of diseased action in that single tissue of the body!

Such, then, is the condition of a part when it is in the acute stage of disease. The phases of the process may be briefly stated as follows:—

1. The application of excessive stimulus to the nervously endowed blood-vessels of the part.

2. Excessive contraction of the blood-vessels in consequence, with expulsion of their contained blood.

3. Exhaustion and relaxation of the same blood-vessels, with consequent excessive influx and retention of blood in them.

4. Diseased sensation, secretion, and nutrition of the

part, consequent on the retention of the blood in the exhausted and relaxed vessels, the vital chemistry being, for the time, improperly carried on.

These phases apply to all acutely diseased parts whatever—from the small pimple on the skin to the most intense inflammation of the lungs or brain. In all, the same stages occur, whatever the exciting cause may be; whether it be the atom of dirt irritating the follicle of the skin, and producing the pimple there, or the rush of cold air into the lungs, irritating their mucous membrane, and drawing excessive blood into it.

From what precedes, it appears that the intimate vital condition of a part in acute disease is one of debility. The blood-vessels have lost their contractile energy, and are oppressed with blood which they lack the power to throw off. But we must not, meanwhile, lose sight of the fact, that the organic nerves themselves, whose re-action on excessive stimulus has produced all this mischief, are also supplied with and nourished by blood-vessels; and that therefore they, too, are in a state implying diseased sensation and nutrition. In other words, they are exquisitely irritable, but their irritability is of a diseased quality, and not sustained, because they are badly nourished by the blood; the result of which is more than ordinary sensitiveness to the causes which first induced the disease, or to any stimulus whatever applied to the part. *Feeble* contraction takes place, then more exhaustion; contraction again, and so until *all* power is lost. Thus a man gets a slight inflammation of the mucous lining of the windpipe from breathing very cold air; allows the same cause to exasperate it daily by acting on the highly irritable but feeble nerves and blood-vessels of the membrane; and, finally, induces the most intense form of inflammation of the lungs—a too frequent illustration of the fact, that the most fatal maladies commence in a "slight cold."

Having thus established the fact, that acute disease of an organ implies extreme debility, morbid irritability, and congestion of its blood-vessels and organic nerves, we may now revert to the proposition, that all so-called general disease originates in some local disorder—a proposition that will best be developed by tracing the physical history of such a local condition as I have above described. And we will take the local inflammation of an organ whose sympathies are the most extensive—acute mucous inflammation of the stomach, commonly called "acute indigestion."

A man ingests highly seasoned meats and alcoholic drinks, and begets in the mucous lining of his stomach a patch of such disorder I have minutely described. Now, though that disorder is, as regards the patch itself, one of *depressed* vital power, it becomes to other parts a source of *exalted* vital action; as if the very fact of the existence of a diseased point roused the system to efforts for its relief—an opinion that was held by HIPPOCRATES, and has prevailed with some of the soundest physicians since his times.* The sympathy thus excited in other organs of the body is in proportion to the amount and kind of nervous matter they contain. Thus, in the case before us, the ganglionic nervous matter of the mucous membrane of the stomach excites the same matter distributed to the heart, whose beats are, in consequence, increased in frequency and force; the pulse becomes rapid and hard; as a result of this quickened pulse, the breathings also quicken. Then comes the sympathy with the spinal cord and the brain, whose functions are rendered irregular or are oppressed; hence the lassitude of mind and limb, the prostration of strength, the somnolence first, and then the sleeplessness, &c. Then there are the sympathies with the mucous surfaces of all the other organs roused, causing the diminution and vitiation of their secretions; hence the heaviness and the aching of the forehead, the suffused eyes, the fevered and dry tongue, the thirst, the stoppage of the bile, the constipation of the bowels, the scantiness of the secretion from the kidneys, all of them dependent on mucous membranes. And as this mucous surface extends to the outer part of the body, forming the true skin, the same morbid sympathy extends thither, accompanied with the same diminution and vitiation of sensation and secretion: hence the dry and hot skin called "feverish heat."

In fact, here is a case of what is called "simple inflammatory fever," a general disease traceable to a small point of acute inflammation in the stomach. Sometimes the same general result follows on the application of cold air to the *outer* mucous surface—the skin—whereby the blood is thrown on an extensive portion of the *inner* mucous membrane of the nose, throat, and lungs; and then nearly the same phenomena are present, and a "feverish cold" is said to exist. But in either case, and indeed in all cases of general symptoms, there is one organ, and sometimes only one spot of an organ, that originates the whole series, and which must be overcome, as the cause, before we can vanquish the symptoms, which are the effects. Too much stress cannot be laid upon this important fact. The denial or ignorance of it leads to the most unscientific and unskilful treatment of disease; it leads to the treatment of effects instead of causes; and, as I shall have hereafter occasion to show, it furnishes the chief arguments against the ordinary drug medication of the day.

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* Indeed, the doctrine that disease, that is, a series of unnatural symptoms, is constantly the signal of the whole body being excited to save some vital part from destruction, obtains countenance from all the facts that close observation of its causes, progress, and termination can supply. If space permitted, it would not be difficult to apply this doctrine to any possible case of disease.

It does not appear that, in acute disease of a part, the organic connection between the containing blood-vessels and their contained blood, is further disturbed than to alter the vital chemistry carried on in them, and thus to produce diseased nutrition or secretions. There is no breaking down of the blood globules—no disorganization of that fluid. There is only excess of blood in vessels that have lost the sufficient irritability to contract on their contents, and which yet, having this low degree of vitality, are exquisitely sensitive to the action of new or additional morbid causes.

But this can only obtain for a certain period. If the acute inflammation be not terminated by some critical action in other organs—if no purging of the bowels, nor purging of the skin by sweat,* nor of the kidneys by loaded urine, nor of the membrane of the lungs by expectoration, puts an end to it by the transfer of irritation to those several organs, the organic sympathy between the blood and its vessels is lost, and the other great organs—the brain, spinal cord, heart, &c.—which the first diseased part had aroused to extraordinary action for the purpose of rescuing the organ in which it exists from disease, being unable to do so in consequence of its intensity, fail in their powers too; and the death of the body follows.

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* Here is another of those terms which writers on the water-cure produce as new, and containing a new idea. As in the case of the "crisis", we must look back 3000 years to find HIPPOCRATES speaking in many places of his writings about "purging by the skin."

Be it remarked, however, that we know not of death of the body save as it is produced by failure of the organic powers of the viscera—of the internal parts. A man is said to die from "mortification of the leg," when, in truth, he dies because the irritation of the leg has extended to the viscera, and, notably, to the digestive organs, and causes *there* a morbid state which kills *them.* As long as they can digest food, the man will live, though both legs were in a state of mortification; and when they will no longer digest food, the man will die, though only a single toe were mortified. And if this holds with regard to the disease of a limb, how much more forcibly is it true when some internal malady alone is concerned! In short, as I have elsewhere said,* "*death comes only by the viscera*"—an axiom that ought to be present to every physician when he visits a patient.

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* In my "Simple Treatment of Disease." Churchill, 1842.

CHAPTER III.

DOCTRINE OF CHRONIC DISEASE.

Passage of acute into chronic disease—How caused by drug medication—Imperfect and forced crises produced by it—Loss of vitality in the blood-vessels, a source of irritation to other parts—Parallel between the states producing acute and chronic disease—Changes of secretion and sensation illustrated in dyspepsia, chronic disease of the lungs, &c.—General conclusion.

Supposing acute disease neither to terminate in death nor in some complete critical action raised in another than the morbid organ or set of organs, there remains a third termination of it—and that is "chronic disease."

To this the ordinary mode of drug medication in acute diseases tends most powerfully. I will endeavour to show how.

A simple inflammatory action of the stomach, such as I have described in the last chapter, being endowed with the name of "acute indigestion," is treated as such; that *name* is treated; the *inflammation* would appear never to be considered—at least it is charitable to suppose so. For what is done? Three or four grains of a highly irritating compound of mercury, called calomel, are administered, the aim being to urge the liver to pour out its bile. After this has remained in the stomach for a few hours, violently irritating it, and calling to its already gorged mucous membrane a further supply of blood, another kind of irritant is administered, in the shape of a purgative saline draught; the aim of *that* being to cause the secretion of a vast quantity of mucus from the whole digestive canal, and especially from the stomach.

Now, in this process two things are to be remarked: first, that calomel does *not* stimulate the liver to act, except by previously stimulating the stomach; it acts, and can act only, by extension of irritation from the stomach to the liver; it never *touches* the liver at all—it is physically impossible that it should; and next, that neither the liver can pour out more bile than usual, nor the digestive mucous membrane pour out more mucus than usual, without more blood than usual being present, whence to derive those secretions. Accordingly, after the double stimulation of the calomel and the black draught perpetrated on the membrane of the stomach, there can be no difficulty in imagining the augmentation of blood in it. *Yet the disorder to be removed consists essentially in an increase of blood in that very membrane!* Yet, again calomel and black draught do certainly relieve a fit of acute indigestion! How is this?

It is thus. It is found by long experience, that a free flow of bile and mucus from the digestive canal and liver is the kind of crisis which Nature chooses, in order to relieve the upper organs of digestion. Autumnal diarrhœa is a never-failing instance of this. And as it is certain that, in acute dyspepsia, those upper organs are disordered—however uncertain or erroneous may be the precise notions of the disorder—the attempt is made to imitate the natural relief by expediting it. An enormous quantity of blood is attracted to the stomach directly, and to the liver indirectly; and the vessels containing it relieve themselves by forcing out the bile and mucus in extraordinary quantities. *A forced, false, and imperfect crisis* is thus produced, and all seems quiet again.

Seems quiet again; for it is impossible that such unnatural and vehement stimulation can be applied to the organic nerves of the mucous membrane without exhausting their energy: it is the law of all living bodies; therefore, although the gorged vessels have relieved themselves by their extraordinary secretions, the nerves, by whose energy they should recover their healthy calibre, fail to afford such energy. In this state of things, nothing prevents the accumulation again of blood in the same vessels: the very first meal after the physic may do this, or it may be a day or two of feeding, or a few days of mental or physical exertion—for these, too, are causes of acute dyspepsia. But whatever the exciting cause, this second accumulation takes place still more readily than the first, the organic power of the part having been weakened; and lo! another fit of indigestion, and the same calomel and black draught as before.

But this time it is not quite so acute in character as formerly. The organic tone of the blood-vessels is diminished, in consequence of the exhausted state of their nerves. The organic sympathy between the vessels and the blood they contain is diminished, from the same cause; add to which, that in the interval between this and the former attack, the membrane of the stomach has not been in condition to afford strong gastric juice, digestion has been of a character not to make good blood, and the want of this operates on the vessels of the diseased membrane. So that, looking to the vessels themselves, to the nerves which influence them, and the blood that circulates in them, the whole of the morbid organ, or part of organ, is in a still lower state of vitality than before.

Nevertheless—and this must never be lost sight of—this diminished vitality in the portion of the diseased stomach is a cause of great irritation elsewhere. The phenomena of headache, fever, &c., are not so intense as before. But although the pain of head, heat of skin, &c., are not such *prominent* signals of the stomach disorder as before, that is because their vitality is diminished: they do not respond with the same vigour and acuteness to the digestive irritation as on the first attack. Still, the mischief, both in the stomach and the brain, and its nerves, as well as the skin, has advanced; their minute action is further than ever from the standard of healthy life. The *two forced, false, and imperfect crises* have left the stomach in a more irritable and more feeble condition than ever.

But what of that? Relief has been procured, speedily and with small trouble. Business and pleasure have scarcely, if at all, been interrupted; the only disagreeable has been the taste of the physic, and perhaps a little griping of the bowels from it. The patient knows not of, and the prescriber cares not for (if he knows), the small spot of lingering irritation that is left behind, to be again lighted up and again extinguished by forced deluges of bile and mucus, until the stomach itself passes from irritation into disorganizing ulceration, or cancer, and, extending its morbid sympathies to the brain, spinal cord, skin, and lower bowels, kills the patient with apoplexy or palsy, or allows him to drag on life, a prey to the miseries of hypochondriasis, to piles and rectum disease, or to an inveterate skin disease.

The mode in which this extension of morbid actions from the stomach over the entire body takes place, will receive further development in these pages. Meantime, the tracing of those actions in the stomach itself, that has been made, will, I trust, put the reader in possession of the organic state which constitutes chronic disorder of the stomach. It will be perceived that it is an extension, *in degree*, of the acute state. In both they are—

1. The exhausted and relaxed condition of the blood-vessels.

2. The enfeebled, yet irritable state of the organic nerves of the part.

3. The presence of an unusual quantity of blood in the vessels, consequent on their loss of power to pass it on.

4. Disordered fluids from, and disordered nutrition of the part, consequent on the presence of excessive blood, and on the imperfect chemistry carried on in vessels that have lost the healthy control of the ganglionic nerves, and the healthy sympathy with their contained blood.

In the chronic state of disease all these conditions are augmented. The enfeebling and irritability of the vessels and nerves go on to such an extent, that, in some cases, no interval whatever of relief from the symptoms they beget is obtained. As regards the excess of blood in the part, this varies with the amount of stimulus applied. A more than ordinary amount of food, or drink of a stimulating quality, will, by exciting the contractility of the vessels for a brief period, diminish the amount they contain for that period; and for this reason it is that some dyspeptics find temporary ease from eating, from taking wine and other alcoholic liquids, or bitters, or opiates. But it is mainly in the alteration of the vital relations between the vessels and their contents, that the chronic stage of disease exceeds and differs from the acute. In chronic disease this relation is so lost, that the blood in the vessels frequently breaks up, loses its globular constitution, becomes brown or purple instead of vermilion, and is changed in its chemical constitution also. As a consequence of all which, the deposits from it, both liquid and solid, are more extensively deranged than in acute disease, where the blood as yet retains its mechanical, and is very slightly, if at all, changed in its chemical characteristics. Hence it is that chronic disease (of the stomach for instance) is so invariably accompanied with acid instead of insipid fluids, with vast volumes of air, sometimes insipid, at others fœtid and offensive ; the vital chemistry of the small blood-vessels mixing together the elements of the blood in such a morbid manner, as to form acid in one case, and aeriform instead of liquid matters in the other. Hence it is, also, that cancerous and other simply morbid and malignant matters are deposited, instead of the usual textures that constitute the part, be it the mucous membrane of the stomach, or of the lungs, the brain, the skin, and other textures.

One of these solid deposits is the nervous matter itself of the part. The loss of healthy structure and vital and chemical constitution of the blood causes a deposit of diseased nervous matter—matter that originates, therefore, diseased nervous sensations. Hence the thousand indescribable sensations of the person afflicted with chronic disease, especially of the stomach ; the material of which his nerves are compsed is diseased in kind. But he also has it diseased in degree ; for there is an excess as well as a deterioration of blood in the part, and the deposit of nervous material is, as a consequence, in excess too. Hence it is, taking the stomach as an example again, that the food taken into a dyspeptic stomach is generally *felt*, which it never is in health ; a sound man knows not, by his stomach, that he has eaten at all—knows not that he has a stomach : the organic nerves in a state of health not possessing *sensibility*, but only *irritability*. Hence, too, the voracious appetite that acompanies some forms of chronic indigestion, in which the excessive irritability of the nerves, from augmented deposit of nervous matter, causes an increased contraction of the muscular coat of the stomach, even to the amount of spasm ; and hunger is nothing more than a gentle spasm of that organ. In some dyspeptics, hunger of this kind is experienced immediately after a very full meal. The same excessive secretion of nervous matter also explains the extreme sensitiveness of the stomach to the sight and smell of many things which, in health, were tolerable to both. And, finally, the combined excess and deterioration of the nervous influence of the stomach produces that immense caprice of appetite, and, in the objects of appetite, the fastidiousness and the desire for change, which characterize some phases of chronic irritation of the stomach.

I have exemplified from this last-named chronic disorder, because it is the most familiar; but the same doctrine applies to all other organs of the body.

In chronic disease of the air-tubes of the lungs, for instance, which includes what are called "old man's cough" and "humid asthma," the same relaxation of blood-vessels and loss of accord between them and their contents, beget morbid expectoration on the one hand, and excessive sensitiveness to the quality and quantity of the air that enters them in respiration on the other. There is frequently, too, the same caprice as regards air, which we have noticed in the stomach as regards food (for air is the food of the lungs); and asthmatic patients will sometimes be able to breathe only the heavy and smoky atmosphere of towns; at others, only the elastic and light breezes of mountains.

Or, suppose chronic disease fixed deeper in the lungs, in their spongy texture; there, too, the same condition of blood-vessels and their contents gives rise to analogous results; and the morbid nutrition going on in the part leads to the formation of abscesses, of tubercles, sooner or later to terminate in pulmonary consumption, of cancerous deposit of calcareous matter, &c.—all of them dependent on morbid influence of the ganglionic nerves of the part, morbid blood-vessels, and morbid blood.

From these instances all the rest may be conceived. In the brain, in the heart, in the liver and kidneys, in the bones and their covering, in the sheaths and great coverings of the muscles, in the ligaments of the joints, and, finally, in the skin, the same state forms the chronic disorder of each and all. Excessive and morbid secretion, nutrition, and sensation, the result of exhausted vitality of the blood-vessels, diseased blood within them, and extreme but diseased sensitiveness of the ganglionic nerves of the part, constitute the organic facts in these different textures and organs of the body.

I now proceed to review the manner in which a combination of points of chronic disorder is brought about, and a disease, from being simple, becomes complicated.

CHAPTER IV.

PHENOMENA OF THE EXTENSION OF CHRONIC DISEASE.

Occasional and permanent extension—Agency of the nervous system in this—Animal sensation not necessary—Rationale of extension *without* pain—Shown in congestion of the brain—Phases of extension—*Why without pain*—Exemplified in various stomach disorders—Extension from stomach to liver—From the same to the air-tubes of the lungs—Stomach cough—Asthma—Pulmonary consumption—Extension to the kidneys; stone, diabetes, dropsy, Bright's disease—Extension to the skin; tetters, scurf, acne, &c.—To the limbs; spurious palsy—Sympathy of nutrition—Importance of the viscera—Extension from without inwards, wounds, &c.—From within outwards, with *pain*—Gout, tic, rheumatism, &c.—Causes of the pain—Generalizations.

I HAVE hitherto been speaking of the minute essentials of chronic disease in any one organ, or part of an organ. The chief characteristic of a living body, however, Sympathy, will not admit of one part remaining in a morbid state, without involving, sooner or later, other parts. The principle upon which this proceeds, and the phenomena elicited in the course of the extension, are of the first importance in guiding us towards the philosophical treatment of disease. The want of precise ideas on this subject is the source of the most inefficient, and, at the same time, of the most dangerous practice in chronic disorder; of practice which strives against effects, instead of causes, and ends by exasperating both, as I shall show in the next chapter.

The extension of chronic disease is either *occasional* or *permanent;* and the frequent repetition of the former leads to the latter. Thus *chronic irritation of the liver and stomach* causes occasional flushing of the face and headache—indications of surging blood towards the head—the intervals between which gradually become less and less palpable, as the establishment of the condition in the head, which causes them, proceeds. It is a sort of warning given before another organ, the brain becomes permanently involved in the mischief of the one first affected.

The agent by which this extension takes place is the nervous system; but both occasional and permanent extension may take place without the intervention of *animal sensation*—as when chronic irritation of the digestive apparatus causes a periodical increase of discharge from an external ulcer, no increase of pain or other sensation attending; or when irritation of the stomach acts slowly, but incessantly on the heart, producing therein organic mischief totally unsuspected, until examination after a sudden death reveals the fact of long-standing disease in both organs. Very frequently, the worst cases of indigestion are those which produce no pain, no malaise even, but in which the body wastes in atrophy. The deposit of tubercles in the lungs from chronic disease of the digestive organs, is another, and too frequent illustration of this fact. In such cases, there must still be transmission of sympathy, of sensation; and, inasmuch as the *animal* part of us is not aware of the transmission, save by its results, it follows that the sensation propagated from one diseased part to another, must have been an *organic sensation*, as contradistinguished from an *animal* one.

Referring to the fact before-mentioned, that wherever there is a blood-vessel, or wherever nutrition goes on, there are organic nerves, the explanation of this organic sympathy, or sensation, will be sufficiently clear. The universality of these nerves and blood-vessels in the body renders the extension of organic irritations from one of its organs to others a very ready, and, indeed, an inevitable phenomenon. The exhausted and irritable nerves and vessels of a part prove, as was before said, a source of irritation, of stimulation to other parts. In these latter, the same minute changes go on, as have been observed in the part first affected—oft-repeated contraction, followed by relaxation and exhaustion of the vessels and organic nerves. Thus, in the instance just quoted, the chronic irritation of the stomach from time to time, violently stimulates the blood-vessels of the brain; these contract vehemently, then relax, and then the blood surges towards the head, to fill them. This process happening over and over again, the vessels of the brain become at length permanently gorged, congested; and *congestion of the brain* may terminate in partial pressure of its substance, and consequently, *palsy* of a limb, or of half the body; or the congestion may end in *disorganization of the brain, insanity, imbecility*, and *death*.

As may readily be conceived, from what has been premised, the shades of this irritation and congestion are infinite. They vary with the amount and character of the first formed irritation, with the predisposition of the part secondarily affected, and with the general temperament of the individual. Thus, in the case of chronic stomach irritation extending to the head, the phase of mischief in this last will depend upon the long or short standing of the stomach disease; upon its exasperation by food or physic; upon the predisposition caused or avoided by the patient's toil or ease of brain and mind; and upon the fact of his having a largely delevoped brain, or otherwise. These various phases produce and represent respectively simple *fulness of the head, impatience and irritability of temper, hypochondriasis, insanity, apoplectic congestion, paralytic congestion*, (I shall speak of the difference between those two states afterwards,) annihilation of the mind in *drivelling imbecility;* so that a simple fit of acute indigestion in the stomach may, by improper management, grow into a chronic dyspepsia, and terminate in idiocy; and this is an almost every-day fact!

I repeat, then, that the most extensive changes in organs may be brought about without the intervention of *animal* sensation or pain; and this because the ganglionic nerves, which alone preside over the offices of the blood-vessels, are concerned in, and are capable of themselves of effecting those changes. The most serious *ulceration of the stomach* and bowels—nay, *cancerous ulceration* of that organ—may go on without the smallest amount of animal pain; but far more fortunate are they in whom such pain is excited at a very early stage of mischief, for they are thereby warned from indulgence in its causes, and cautioned to remedy it; whilst, in the other case, the very core of life may be unsound, the vitals undermined, and beyond remedy, before the opportunity of applying any is given. How often have I seen medical men pronounce positively the absence of all inflammation of the digestive organs, because pressure on them with the hand elicited no *pain!* and this at the very time when apoplectic fulness of the head from extension of chronic irritation of stomach kept the patient tottering on the brink of the grave, yet was speedily relieved by hot fomentations over the stomach, and spare diet.

The fact is, that the nerves of organic life neither are obedient to the will, nor capable of sensation, in the ordinary acceptation of that term. On the other hand, they urge and modify both the will and the sensation of our animal nerves—that is, of our brain, spinal cord, and their nerves—inasmuch as these are nourished by blood and vessels, over which the organic nerves hold sway; and their state of acuteness or dulness, of firmness or flightiness, depends on the way in which they are nourished. By virtue of this it is that we constantly see chronic stomach disease playing by sympathy so much upon the nutritive vessels of the brain as to induce, at one time, the most vehement will of fiendish impatience, and, at another time, prostrating it in the hopeless irresolution of hypochondriasis. By virtue of this it is that the most minute changes in the digestive parts act upon the brain and mind, no *animal* sensation intervening; unfounded fears, anxieties, and imaginary diseases, tormenting the soul, and keeping up the distresses of that malady. By virtue of this it is that food sweetens the temper which hunger had acidified; and that the best time to ask a favour is after—the worst time before—dinner. By virtue of this it is that chronic irritation of the stomach is so frequently attended with dreams generally of an appalling or distressing character, and that the sleep in such cases is so often unrefreshing. All these states are owing to the morbid nutrition of the brain, swayed by the morbid action of the ganglionic nerves, and the blood vessels that pervade its substance. But all these may exist without pain.

Again, the chronic irritation of the stomach may creep on towards the liver without the smallest intervention of pain. The same membrane that lines the former passes on to line all the myriad bile ducts of the latter, and is supplied with enormous quantities of ganglionic nerves, and very sparingly with nerves of animal life. Hence it is that, very frequently, pains are experienced in the right shoulder, in the head, and appear in the form of *tic douloureux* of the face, arms, fingers, and thighs, that are clearly traceable to *chronic irritation of the liver*, in which organ itself, meantime, not a sign of pain has been experienced. The explanation of these sympathetic pains will be given by and by.

Or take the instance of *chronic disease of the air tubes of the lungs*, or "old man's cough." This may go on to a most destructive extent without any pain whatever. The outpourings of various kinds of expectoration from the diseased blood-vessels of the pulmonary mucous membrane into the air tubes, may produce a sense of oppression, or a tickling, that brings on the instinctive act of coughing; but there is no ache nor pain in this; besides, if there were, it would rather be from the consequences of the chronic irritation—the fluid to be expectorated—than from the irritation itself, that it would proceed. Nay, in the most formidable of all lung diseases—*pulmonary consumption*—the whole malady may be enacted from the formation of tubercles to the last attempt at expectoration, without pain of the chest.

Not to multiply instances, I may mention that huge fatty tumours, bony tumours, and even cancerous tumours, *all of them the results of chronic irritation*, may be deposited without animal pain of the part.

Pain, therefore, is not a necessary concomitant of chronic disease of the organ, and of its extension to others. It frequently *is* an accompaniment, but not *necessarily* so. An important maxim, the denial or ignorance of which tends to that disastrous system of stimulation, which is at once the producer and the maintainer of chronic disease. Denying the existence of irritation and inflammation where no *pain* can be elicited, the ordinary plan of proceeding is to stimulate, on the ground that what is not inflammation must be want of tone. From what has preceded, the reader will perceive that chronic inflammation is, *quoad* the blood-vessels, want of tone, but also, *quoad* the ganglionic nerves, excessive sensitiveness. I shall amplify this point when speaking of the causes of the extension of chronic disease.

Extension of chronic disorder is not confined to adjacent organs. Perhaps we may even say, that it more commonly takes place towards organs at a distance. I have already quoted the case of chronic stomach irritation being propagated to the brain, and it is one of the most frequent occurrences. I have also alluded to the non-painful extension to the heart.

Another instance is the *propagation of the same stomach malady to the lungs*, and this is of two kinds. One degree of the first malady excites and maintains in the mucous membrane of the pulmonary air tubes a chronic condition of extreme sensitiveness or morbid secretion, and sometimes of both, which renders those parts exceedingly susceptible to alternations of temperature, and thus, is incessantly causing the patient to catch fresh colds, besides maintaining in the intervals a dry, hard, ringing cough, well known as *stomach cough.* The frequent repetition of the catarrhal attacks of the air tubes alluded to, at length ends in the establishment of a chronic inflammation therein, attended with a varying, but always some amount of expectoration; and thus, what was at first only a nervous irritation, begetting a sympathetic cough, ends by a substantial chronic inflammatory congestion. In this congestion, induced by sympathetic extension from the stomach, we behold one of the elements that enter into that complicated malady called *asthma*—which I shall notice hereafter.

A second degree of chronic stomach irritation, propagated to the lungs, tends to the formation of tubercles, and the commencement of *pulmonary consumption.* In this instance, the phase of irritation is such as to excite a sympathetic irritation in the *spongy tissue* of the lungs, not in the air tubes. The minute changes constituting chronic disease, so often spoken of in these pages, will go far to explain the depositions of tubercular matter in such a case. But this is not all. In most persons in whom tubercular consumption obtains, there is a congenial disposition of the circulating blood, which tends to such deposition in *any* tissue of the body as we behold in *white swelling of the knee and elbow*, which are nothing more than inflammation of tubercles deposited in the bones of those joints. Now, the organic sympathies between the stomach and lungs being great, from the vast quantity of organic nervous matter they both contain, the deposition in question takes place more frequently in the lungs than elsewhere. The fact is, meantime, that the process of digestion in the stomach, which produces the constitution of the blood alluded to (a constitution commonly known as *scrofula*), is rendered a morbid process in consequence of the chronic inflammation always going on there; *for never was there a patient labouring under tubercular deposit in the lungs who had not previously to, and concomitantly with it, a chronic disease of the stomach.* I put this down as an invariable fact, and am ready to prove it in any case that may be submitted to me; so that chronic stomach irritation acts in two ways in the production of pulmonary consumption :—

1st, By establishing, through the sympathy which exists between all parts of the organic nerves, an irritation in the spongy texture of the lungs—a state which, of itself, supposes a morbid condition of the circulating blood in the chronically diseased spot, but which, in this case, is further rendered morbid by

2nd, The morbid state of the whole blood of the body resulting from the imperfect digestion of food in a state of chronic disease.

As I have already remarked, this extension of chronic disease may, and generally does, take place without the slightest pain.

Chronic irritation of the stomach, in which the liver is also usually involved, also takes an *extension towards the kidneys*, in which an action is consequently set up, and a kind, of blood generated, both generally in the body, and particularly in the kidney, that produces a secretion of variously disordered urine, but the chief varieties of which are the acid, the albuminous, and the saccharine. As results of this extension we have to note three formidable maladies—*stone and gravel*, *Bright's disease*, and *diabetes.* Another disease, *dropsy*, very often attributed to the kidneys alone, I shall, further on, show to be connected rather with malady of other parts, and notably of the blood-making organs, the stomach and lungs.

There are some extensions of chronic disease of the stomach to the skin that take place without pain or other animal sensation. Several kinds of *tetter* come under this category, especially those of the dry kind, which are marked by an excessive secretion of skin, causing the *scurf* that so often prevails in patches over the body.

The skin complaint, technically called *acne*, and which consists in the presence of small pimples with white heads, scattered over the shoulders and forehead, and thickly ranged on the chin, is, for the most part, unaccompanied with pain or other sensation, in its character of an extension of chronic irritation of the digestive organs; for that it is such is abundantly proved by the whole history of the disease, as well as by the operation of diet, and other medical means applicable to the stomach upon it.

As regards the extension of chronic disease of the digestive organs to the limbs, without the presence of pain, there is only one form of such extension; and even this, though frequently unaccompanied by pain, has the animal sensations of lassitude, tremblings, heats, &c. I allude to the gradual failing of power over the limbs, swelling of the joints, spasmodic drawing of muscles that bend the limbs, and final distortion and fixation of them; the whole being the result of an intense destructive irritation of the digestive organs, deterioration of digestion and blood-making, and consequent bad nutrition of the whole body, the animal nervous system especially. I shall have to speak of this condition at some length when treating of the causes of chronic diseases, as also when the inividual diseases come to be considered. Meantime, I shall mark it by the name of *spurious palsy*.

In the instances enumerated, wherein no animal sensation accompanies the extension of chronic disease from the stomach in all directions of the body, that extension is accomplished by the universal sympathy of nutrition, as it is carried on under the influence of the ganglionic nervous system. But, though universal, that system has a centre in which the greatest masses of the matter constituting it are congregated, and towards which irritations commencing in any part of the body converge; just as when they commence in the stomach, they diverge to all other parts of the body. That centre is to be found in the ganglionic networks and nuclei that abound in and surround the viscera, and, in a more especial manner, in that portion of them which regulates the offices of the upper organs of digestion, the stomach and liver. All the facts of healthy, as well as those of diseased life, confirm this doctrine. In the organs of digestion we behold the starting point of all the nutrition of the frame: according to the vigour they exhibit is that of the other viscera, of the brain, and of the limbs; and when these are wearied by exertion and the natural waste, they transmit to the stomach organic sensations that produce in it the craving for supply, which we call hunger, and the first act of restorative nutrition, which we call digestion. Suppose this digestion to be bad, what follows? Imperfectly formed blood: whence comes bad nutrition of parts—bad solids and fluids; the solids weak and iritable, the fluids morbid and iritating: and both send back their irritations to the parent mischief in the stomach. In short, there is a *sympathy of nutrition* going on between all the parts of the body, independent of the *animal sympathy* commonly spoken of; and whilst the latter has its central points of convergence and divergence in the brain and spinal cord, the former—the *sympathy of nutrition*—has those points in the ganglions and networks of nerves of organic life that exist so largely in the immediate neighbourhood of the primary organ of nutrition, the stomach.

When, therefore, disease, commencing in an acute form in any of the organs or tissues of the body, passes into the chronic state, an organic sympathy is established with the centre of organic life in the stomach; and according to the condition of the stomach will be the intensity, the duration, and the curability of the local chronic disorder; for the stomach sends its organic sensations back to the morbid part. The smallest patch of skin disease on the leg or arm is maintained in its chronic state by some analogous irritation in the great digestive organ, and is, in fact, a symptom of the existence of such irritation. A broken bone will not unite, neither will an external ulcer heal, if there be chronic disease of the stomach going on—the fracture and the ulcer become chronic too. *In short, we know not of chronic disease of any part of the body without some phase of the same condition in the nervous and other tissues of the stomach; this is an unvarying rule.* And though in many cases appetite may be present, digestion free from uneasiness and apparently perfect, yet will the distant malady *never* be got rid of, so long as remedies that act upon the digestive organs, to reduce irritation, are avoided. ABERNETHY knew this well; but inasmuch as he failed to appreciate the true meaning of chronic digestive disorder, and the process and agent of organic sympathy, the remedies he applied rather transferred than extinguished, and even, in the long run, exasperated the malady they were directed against. I shall exemplify this when treating of the causes and progress of chronic disease.

Whilst thus the extension of chronic disease is in many instances from within outwards, commencing in the digestive parts, and radiating in all directions; and whilst, on the other hand, irritation commencing in some external part is propagated by sympathy towards the digestive organs, it will depend upon the condition of these last how long and how severe the disease shall be in the first case; and whether, in the second case, the external irritation shall become chronic at all, and how long it shall remain so.

For, suppose a lacerated wound of the leg. It sends organic irritation to the stomach. If the stomach be in a sound condition, it will be able to re-act upon the irritation, and, by virtue of its good digestion, send to the wounded spot blood of a healthy and healing character. The consequence is, that between the absence of irritative re-action from the ganglionic centre and the presence of healthy blood to throw out the matter that is to unite the wound, the latter heals without inflammation. Had the irritation of the wound found the nerves and blood-vessels of the digestive parts chronically diseased, all this would have been reversed: the wound would have remained open, and chronically irritated; that is to say, the same diseased blood, blood-vessels, and secretions, and the same diseased sensations, would have pervaded it, just as long as, and no longer than, the stomach remained in like state.

But further, the irritation commencing without may induce chronic disorder of the stomach, which, as in the former instance, maintains the external mischief. Thus, a blow is given on the knee-joint; a shock is given to the stomach in consequence; vomiting ensues; this acute irritation of the stomach passes into a chronic state, and then commences that interchange of irritations which (exasperated by the ordinary treatment) is so often found to terminate in amputation of the limb. Of course, in this and all similar cases, the whole series of phenomena will depend upon the violence of the first irritation; if the blow be not very severe, and the stomach sound, the latter will triumph, and no chronic disorder of the knee will be established.

To return to the extension of chronic disease from the digestive organs to the outer organs. This would appear to be done in not a few occasions, as an attempt on the part of the inner and vital part to throw its mischief on some less important external part. Strictly speaking, this is scarcely extension; it is rather a transfer. Yet as it is rarely, if ever, accompanied by a *total* transfer of the stomach malady, it may be here referred to; the rather as it is an important and frequent phenomenon in the course of many chronic diseases. In *acute* disease, the same phenomenon is exhibited in the cruptive maladies, measles, small-pox, scarlet fever, &c., which are but efforts of the violently irritated internal parts to throw some part, at least, of their mischief upon the skin; in doing which, they involve the animal nervous system, the brain, and spinal cord. But in the chronic form the extension takes place more slowly, and a skin disease of some kind, or an ulcer, is gradually established as a sort of counterpoise to the irritation which would otherwise prey upon the vital parts and destroy them. That something of this obtains is plain from the fact, that whenever these chronic skin diseases or ulcers are driven in, or dried up, many serious results follow in some important viscus, such as apoplexy of the brain, spasm of the heart or stomach, spitting of blood from the lungs, &c. It is well known that Napoleon had a patch of skin disease on the outer side of one of his thighs; and that whenever he felt heavy or melancholy, or more than usually irritable in mind and uneasy in body, he had only to *coax* a further amount of irritation into this patch, by scratching until two or three drops of blood came, to find immediate relief. And this necessity arose whenever the skin disease had diminished in degree; that is to say, whenever the disease within had become more concentrated and intense.

Sometimes this extension to the surface of the body only takes place at certain times, the internal chronic malady, meantime, always remaining there. Thus, many persons have cruptions of various kinds in the spring, or in the autumn. Others have fulness of the mucous membrane of the nostrils, and bleeding thence at periods depending on the accidents of the patient's mode of life. Others, again, have painful itching and bleeding hæmorrhoids whenever the smallest aberration from cold diet is permitted; and not unfrequently without any such causes working, internal chronic disease takes this mode of relieving itself by extension from time to time to less important parts. One of the most harmless, but at the same time the most troublesome instances of the occasional extension of chronic stomach disease, is the *tenderness of the feet*, so often complained of by dyspeptic patients. *Swelling of the feet* is another instance. Sound stomachs are subject to neither of these evils.

Under this category of extension to the external organs of the body, come the important diseases, *gout and rheum-*

atism. Here the extension is accompanied with the phenomenon of pain, as it also is in another too prevalent disorder, which is also an extension of internal chronic mischief—I allude to *tic douloureux*, in its various shapes of *megrim* or *nervous headache*, *toothache*, *sciatica*, *tic of the face*, *of the fingers*, *&c.*

Pain in these cases is attributable to the peculiar phase of the internal irritation, to its fixing on a peculiar tissue, and to a certain organization of the individual.

The phase of internal irritation is generally of the most inveterate character; the loss of power on the part of the blood-vessels and ganglionic nerves would appear to be extreme, for in no series of maladies is it mastered with greater difficulty than in those just named. Moreover, the mingled feebleness and irritability of the ganglionic nerves so often referred to, would seem to be excessive, since causes almost inappreciable suffice to rouse the lurking irritation to the point of producing pain. And this mingled morbid state causing a similarly irritable condition of all the nutritive nerves and blood-vessels over the body, will account for the exquisite sensitiveness of *gouty*, *rheumatic*, and *tic patients*, to the smallest change in the atmospheric and telluric influences. A cloud passing athwart the sky is often felt by sufferers from *tic*, who will also tell you how the wind has changed in the course of the night, or that snow will fall in ten or twelve hours, before there is to others the least sign of it. The same may be said of gouty-rheumatic persons. And in both maladies there is readiness to take cold that can only be accounted for by the enfeebled action of the vessels and nerves that minister to the nutrition of parts, on one hand, and to the morbid sensitiveness of the nerves of the brain and spinal cord distributed to the skin, on the other.

The peculiar tissue affected in internal chronic disease, which exhibits itself in gout, rheumatism, and tic, is more especially the *nervous tissue of the stomach and liver*—that is to say, there are rather irritation and congestion of the ganglionic nerves of those parts than of the mucous membrane; for it is very common to find the tongue perfectly clean in the worst cases of the diseases in question. No doubt the mucous membrane is, in many instances, involved also; but that is not an essential of the state I am speaking of. Now, it is a well-established law of the economy, that similar tissues have the strongest sympathies; and it is a well-established anatomical fact, that a large portion of the spinal cord (that portion of it which ministers to sensation) is very similar in texture to the ganglionic nerves of the viscera. Accordingly, these last being inordinately irritated, a sympathetic irritation is roused in the spinal cord, and therefore in more or fewer of the nerves which proceed from it, and are distributed to the joints and muscles of the body:—if in the nerves of the face, producing the most usual form of *tic;* if in the great nerve of the thigh, producing *sciatica;* and if generally to the superficial nerves of a limb, producing *neuralgic rheumatism* of that limb; but in rheumatism and gout, and tic, alike, there is the further *organic* irritation, originated and maintained by the sympathy between the ganglionic nervous matter of the viscera, and that of the particular limb, joint, or nerve, that may be respectively the seat of the rheumatic, the gouty, or the tic pain; so that the irritation radiating directly from within to the outward point of disease, and again radiating from within to the spinal cord, and thence by the *animal nerves* to the same outward point, these diseases are with much propriety stigmatized as complicated, and dreaded as intractable by most medical practitioners of the ordinary treatment.

Lastly, the pain in these maladies is attributable to individual organizations; in other words, the reason why some persons having visceral irritation are more liable to have it thrown upon the animal nervous tissue, inducing the pain of gout, rheumatism, and tic, than other persons having the same internal irritation, is to be sought for in the greater development of the animal nervous system (especially of the spinal cord) in the former. In proof of which, we find that the great majority of those who are liable to those diseases, either have been (before they were crippled), or are, given to the strong exertion of the will in the shape of strong exercise: the spinal cord being, let it be remembered, the seat of the will, which is exercised by its nerves sent to the muscles of the whole body. In *tic*, more particularly, I have remarked that almost every patient is possessed of a vehement will, and of hard muscles on which to exert it: and both in it and rheumatism I have observed the characteristic energy of those afflicted with either. You never see a phlegmatic nature attacked by rheumatism or tic, and very rarely by gout.

In the extension, then, of chronic visceral irritation in the forms of rheumatic, gouty, and neuralgic disorder, we have still the phenomenon of *organic* extension, that is, from the centre to the circumference of the ganglionic system of nerves; but we have, in addition, the phenomenon of pain, indicative of extension from the same visceral irritation to the spinal cord, producing therein an action which is the cause of the pain experienced in the external affected parts. Let both these facts be well borne in mind; they bear much on the scientific treatment of the diseases in point.

As, in the instance just considered, the chief extension was to the *spinal cord* and its *nerves*, so in another series of phenomena connected with the animal nervous system, the extension is particularly to the *brain*. These phenomena are collectively called *nervousness* or *neuropathy*, and may be sufficiently intense to deserve the names of *monomania* and *insanity*. In the former, the amount of irritation in the ganglionic centre is not so extreme as to maintain, though it is sufficient to generate, an irregular circulation in the brain. Hence we find that nervousness is brought into play by surrounding circumstances; the patient being tolerably free from it if withdrawn from external causes of excitement, and prevented from the strong exertion of the will. But in monomaniacal and general insanity, the brain circulation of blood is permanently deranged, the ideas are continuously confused, and both indicate a degree of chronic ganglionic irritation in the abdomen that is of the most intense character. In these neuropathic and insane instances, as in the neuralgic states last spoken of, a certain organization of the brain for the most part obtains, which renders it obnoxious to the radiation of the ganglionic irritation to its own tissue rather than to other textures of the body. Whilst, however, this is admitted, it must not be supposed that in these unfortunate conditions the brain alone is concerned; both one and the other are much more *essentially* maladies of the nerves of the abdomen than of the brain, the facts and arguments in favour of which I have fully stated in my work, entitled "*An Exposition of the Symptoms,* *Essential Nature, and Treatment of Neuropathy or Nervousness.*"*

This sketch of the mode of extension that obtains in chronic disease points to a few generalizations which it is important to mark, as in the appreciation of that form of disease, as well as in its treatment, they should ever be prominently present to the mental eye of the medical practitioner:—

1st. Chronic disease may exist, and its extension from one to several organs may take place, without the intervention of animal pain.

2nd. In such cases, the organic or ganglionic system of nerves is alone concerned, and the extension is effected by the organic sympathy which exists between all the tissues of the body by virtue of their common nutrition from the same mass of circulating blood; of which sympathy and nutrition the nervous system in question is the representative.

3rd. Chronic disease may exist, and its extension from one to several organs may take place, with animal pain.

4th. In such cases, the ganglionic irritation has been more especially fixed in the purely nervous tissue of that name distributed in the abdomen, and has produced a sympathetic irritation in the same nervous matter distributed to the blood-vessels which nourish the animal nervous centres, the brain and spinal cord; the consequence of which is *pain* of more or fewer of the nerves proceeding from these last to the various external and internal parts of the body, constituting *neuralgic diseases;* or unnatural sensations and perceptions of a temporary character, constituting the various shades of *nervousness*; or, lastly, perverted ideas of a permanent character, constituting the various shades of *mental insanity.*

5th. Disease, of what part of the body soever, is endued with the chronic character, and maintained in it only by some chronic irritation in the central portions of the organic system of nerves, and notably in those portions that are found about the stomach and liver. Whether the starting point be in the skin or brain, or digestive organs themselves, there is no chronic disease without the implication of these last. If *they* be sound, the causes of disease applied elsewhere, in distant parts, are resisted and overcome: if they be inclined to disease, those causes act indirectly upon them, and, through them, establish disease in the distant part.

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* In one vol. 8vo, second edition, 1842. Churchill, Princes Street, Soho, London.

6th. The extension of chronic disease from the internal to the external parts is usually made for the purpose of relieving the former, which are immediately necessary to life, at the expense of the latter, which are less so. And this is done either periodically, as in *gout*, *tic*, &c., or permanently, as in chronic rheumatism, skin disease, &c. Of the rationale of this effort at relief we know little; and in this want, it has usually been ascribed to the restorative power of nature—the *vis medicatrix naturæ* of the schools.

No allusion is made in the above statements and conclusions to the doctrine of chronic disease advanced by LIEBIG, because that doctrine applies only to the *chemical* changes that occur, and because these are, in a living body, necessarily secondary to the *vital* changes, upon which I have more especially built. In the Appendix reference will be made to the applications of LIEBIG's theory to the treatment of chronic disease by the processes of the water-cure.

CHAPTER V.

THE CAUSES, PROGRESS, AND TERMINATIONS OF CHRONIC DISEASE.

Constitutions that predispose to chronic disease—The ganglionic and scrofulous constitutions—Previous disease—Blood-letting as a cause —Drug medication in acute disease—How it causes and maintains internal chronic disease—Note on homœopathy—How external chronic disease is kept up—Stimulating diet—Care—Intellectual labour—Progress and peculiarities of chronic disease—Occasional exasperation into an acute form—Termination in organic disease—Act of death in chronic disease.

Having, in preceding chapters, entered into the minute conditions constituting chronic disease, and traced its origin, I shall, in the present one, inquire into its predisposing causes, and trace its progress towards the various terminations to which it is liable. In doing this, I shall suppose that the minute conditions alluded to, as well as the mode of extension, are understood from what has been already advanced, and shall therefore have no occasion to repeat them, but may speak of them in a more general language. Having explained terms, it is logically correct to use them.

There would appear to be a decided predisposition towards the establishment of chronic disease in certain constitutions—that is to say, acute disease has a greater tendency to become chronic in some than in other persons. What this constitution is, may, perhaps, be hardly pronounced by an epithet. The *scrofulous constitution* may be signalized as peculiarly liable to fall into this form of disease. But there is another organic disposition which, without the distinctive characteristic of scrofula towards glandular disease, consists in a feebleness of the nutritive digestive organs that induces the formation of solids and fluids of the body that are unequal to the strong and sustained reaction against external things, which is the fortunate prerogative of the healthy. Persons in this state may almost be said to have a congenital chronic disease; for in them, at their best, we behold the majority of the symptoms of chronic irritation of the stomach and bowels. There is the clean and very red tongue, sometimes split and too large: enlarged tonsils of the throat; gorged eyelids; lips almost purple with congestion; breath more or less offensive; appetite keen but small, with rapid swallowing of food; sinking, and incapability of going long without food; obstinate bowels. Those persons are, in their exterior, unlike the scrofulous, in tending rather to emaciation than puffiness and fat (except that the abdomen is often large); in being more frequently dark than light-complexioned; in their tendency to vivacity rather than slowness of feeling and expression. They are nervous and fidgety; excessively anxious about all they are or are not concerned in; are for the most part bad sleepers, and wake with a sense of sinking. They are very much given to take cold, especially that form of it called *influenza*, and also sore throat. They do not so commonly fall into pulmonary consumption as the scrofulous, though they are liable to it. On the other hand, they exhibit in all their intensity the various affections of the limbs which, ordinarily treated as *rheumatism* and *rheumatic gout*, are resolvable into forms of *neuralgia*, the sympathies of the abdominal viscera being, in this disposition, established more especially with the brain and spinal cord. Finally, they do not appear, as in scrofula, to inherit or propagate the constitution in question.

To this diathesis, or disposition (I do not call it *temperament*, because that depends on the whole organization viewed congenitally, and is not alterable by any plan of treatment), I would apply the term *ganglionic*—the *ganglionic constitution*, inasmuch as it consists essentially in a chronic congestion of the viscera, and of the nervous centres of that name situated among the viscera.

From what has been said in former chapters, it will not be difficult to comprehend wherefore this sort of organic congestion tends to drive acute into chronic disorder, and to maintain the latter in any part of the body. In fact, the centre of nutrition being at fault in its function, the extremities are deficient in that energy which can alone accompany soundness at the core. Almost the whole blood of the body is accumulated in the viscera, and but little remains for the surface to enable it to resist and react upon external agencies of temperature, electricity, &c. Accordingly, we find in such constitutions, besides the liability to catarrh already alluded to, an acute sensitiveness to variations of atmospheric electricity, the spirits, strength, sleep, &c., varying with almost any cloud that passes over the sky, and with every change of wind. By virtue, also, of the strong sympathy that exists between the viscera and the brain and spinal cord, we find in this state many signals of irregular and painful function in the latter parts, such as the anxiety and fidgety character of mind before mentioned; and, as regards the physique, a strong tendency to *spasmodic* and *neuralgic* phenomena of the limbs. Doubtlessly to this cause is to be attributed the sensitiveness to electric changes, since these infringe upon the delicate extremities of the nerves of the spinal cord so thickly spread over the whole surface of the body. The individual, in short, is *all viscus*, so to express it. Life, feeble in its character, seems, by the conservative law of nature, to concentrate all its forces in the viscera, as the essentials for its maintenance; and these forces are to be found in the blood. Yet this same congestion of blood about the stomach renders the formation of that fluid by the stomach an imperfect process; and a badly elaborated and poor blood always circulates in persons of the ganglionic constitution, in which we detect another reason for the want of reactive energy, the poor blood depositing poor solids—nervous solid among the rest.

When, therefore, in such a constitution, acute disease invades a party, the viscera are in the best possible state to render it perilous; and if the immediate peril be overcome, to render it chronic, for there is not sufficient vigour to produce a complete crisis of the acute malady. Hence colds that involve the stomach—influenza colds—and that hang about for weeks; hence cough for months, after inflammation of the air tubes of the lungs; rheumatism, that vanishes partially with warmth and dryness, to return vigorously with cold and damp; erysipelas, that creeps about the skin, but never totally disappears, and so forth. In all which, meantime, we behold none of the slow inflammation of the bones, of the glands, of the brain, of the tissue of the lungs, which are so characteristic of the scrofulous diathesis, and constitute respectively *hip-joint* *disease* and *white swelling*, *goitre* and swelled external glands of the neck, *water on the brain* and *insanity*, and *tubercular consumption*. Neither on the score of nervous sensations, nor tendency of diseased action, can this constitution be deemed scrofulous. Moreover, it is most commonly acquired, not inherited; acquired by long-continued abuse of the nervous system, either in the way of excessive mental sensations or excessive physical exhaustion. And I call it not a disease itself, because, to all appearances, the subject of it is well, and is only in an apt state to receive disease.

The other constitution which predisposes to chronic disease is the *scrofulous*. All medical writers have remarked the low degree of inflammatory action that obtains in persons of that constitution, even when, from the mode of coming on and from the symptoms, it is called acute. *Sub-acute* would generally be the more precise term to designate the morbid action. This is due to the fact, that the innate power of the nutritive nerves and capillary blood-vessels is low; their condition is that of feebleness and great irritability; and the exhaustion following on the excitement of a morbid cause is consequently sudden and extreme; such in short, as constitutes chronic exhaustion. Moreover the rallying power of those nerves and vessels is small; and hence it is that chronic disease is not only more readily established, but is more slowly cured, in individuals of the scrofulous disposition;* yet although the inflammatory action accompanying it be so low and slow, it is on that very account the more destructive, the vitality of the part being more utterly lost. Thus, in chronic abscess of the lungs (*pulmonary consumption*), of the bones of the loins (*lumbar abscess*), of the bones of the knee-joints (*white swelling*), the destruction is so extensive as, in the vast majority of cases, to carry off the patient; and these are all instances of chronic disease occurring in persons of the scrofulous diathesis. I shall enter more upon this subject in a future chapter. It suffices here to indicate the disposition in question as a strong predisposing cause of chronic disease.

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* The difficulty of removing scrofulous inflammatory action is testified by all writers on the subject; by GIBBES, QUINCY, MORLEY, WHITE, HENNING, LLOYD, GOODLAND, CLARKE, and others among ourselves; by HUFELAND and VERING among the Germans; and by BORDEU, FAURE, CHARMETTON, MAJAULT, GOURSAUD, and BAUDELOCQUE among the French. CELSUS says of scrofulous inflammations, "*præcipue medicos fatigare solent.*"

All constitutions, likewise, that are dilapidated by previous disorders, especially by *typhus fever*, *scarlet fever*, the various forms of remittent and intermittent fevers, such as the *yellow fever* of the West Indies, the *jungle fever* of the East Indies, and the *fen fevers* of Europe, and by *influenza* and *syphilis*, are much disposed to take on the chronic form of disease. Referring to the rationale of that form, the reason of this will be sufficiently obvious.

Long-continued exertion of the intellectual faculties—painful tension of and pressure upon the affections—excessive use of the animal propensities—these, by wasting the nervous energy, impair that organic power, the exhaustion of which is the essential of chronic disorder, and may therefore be regarded as predisposing causes of such disorder.

For a like reason, all losses of blood or of some of its constituents, as in excessive secretions of mucus, urine, &c., tend to the passage of acute into chronic disease. Hence it is that *bleeding with the lancet* is such a fertile cause of this. The large quantity of blood suddenly withdrawn from the body has invariably the effect of sending the greater part of what remains to the internal parts—to the viscera. Innumerable facts and experiments show this to be the case; and when we consider that *there* is the centre of organic life, we shall not wonder that the mysterious instinct of nature should send the nutritive liquid, the blood, where it is most required to prevent the extinction of that life. Now, it so happens, that these bloodlettings are usually practised for some acute inflammation of the viscera, and they certainly sometimes answer the aim of reducing it. What takes place though, subsequently? On one hand, the whole body being deprived of a mass of its blood, there is a rush of that liquid towards the very viscera that were inflamed, and this the more, the more the blood is drawn. On the other hand, the visceral organic nerves being deprived, like the rest of the body, of a quantity of nutritive liquid, lose also a quantity of that energy which they derive, also, like the rest of the body, from being nourished by the blood. Thus, there are two reasons why the previous acute inflammation should pass into the chronic:—1st, The nerves and blood-vessels have lost their contractile power—that power which was to enable them to rid themselves of the blood that oppressed them; and, 2nd, The quantity of blood in the oppressed part still remains sufficient to perpetuate the oppression. To these may be added the fact, that the blood which remains in the body is vitally affected by the withdrawal of its former portion. The blood itself is a living fluid, has an independent existence, and the shock to it is as the loss of a limb to the body; besides which, the abstraction of a quantity of the red globules is not very soon compensated by digestion of food; on the contrary, it is a very slow process, this restoration of the red globules: men who have undergone large bleedings have been found, when bled so long as three years afterwards, to have not yet recovered them, so watery, poor, and devoid of clot was the blood taken. Such a state of the nutritive liquid is not likely to improve the organic energy—that is, to resist and throw off chronic disease.

Were I to detail the instances that have come before me at Malvern, wherein a series of nervous and other symptoms have dated *through years* from, in some cases, a single large bleeding, the recital would appal many who look upon that operation as very simple and very innocent, because very commonly practised. I have seen persons afflicted with inveterate *indigestion* and *hypochondriasis* ever since bleeding for acute inflammation of the stomach. The most hopeless case of *nervousness* I ever met with was that of a youth, who, in the outsetting of small-pox, was largely bled for the headache which accompanies that stage of the disorder. The result was a loss of power to the system, which disabled it from the free evolution of the disorder. Stimulants were given in large quantities to prevent death. His youth aided them, and he got through it; but between the bleeding and the stimulants which it necessitated, the patient is an incurable neuropathic. The repeated bleedings in acute inflammation of the lungs prove a most fruitful cause of chronic disease in those organs, and even of tubercular deposit and *pulmonary consumption*. I have seen instances of both in the persons of patients seeking relief from the water treatment. I have seen here also two cases of *dropsy of the chest* after acute pleurisy, which had been treated by large and repeated bleedings. The non-professional reader should understand that dropsy of the chest is the *chronic* inflammation of the pleura, and thus we have another instance of the passage of the acute into that form of disease attributable to bleeding. But a more ordinary result still of bleeding is *general dropsy.* Here the loss of the nutritive liquid so debilitates the blood-vessels, that they are unable to carry on the vital chemistry in a healthy manner; and the watery parts of the blood are separated in large quantities instead of the peculiar tissues of the different parts of the body. Some years ago, when bleeding was more commonly practised than at present in ordinary fevers, the occurrence of dropsical effusion in some of the cavities of the body, or under the skin, was a most frequent concomitant of the convalescence from them. And this convalescence itself, what is it but a *chronic* following on the acute fever? Of this more anon. Meantime I repeat that, in the vast number of chronic cases presented for treatment at Malvern, blood-letting is clearly traceable as a cause. The patients tell me that "they have never been well since;" that "they were going on very well until they were bled," that "everything tells upon them more severely since they were bled," and so forth—facts which speak trumpet-mouthed as to the destructive agency of that too commonly used operation of bloodletting.

As if, however, this was not enough, the system of *drug medication,* so much relied upon in acute malady, comes to aid in perpetuating it in the chronic shape. In fact, it is almost impossible to conceive of an acute disease being *cured* by these double means of phlebotomy and physic. The very legs of the frame, so to speak, are cut from under it; the very forces by which it is to throw off the malady of the vitals upon some less important part, are taken away with the blood that flows, and paralysed by the confused stimulation of various drugs. On this subject I cannot do better than repeat what I have said in my "Simple Treatment of Disease;" and let it be remarked, that what follows was written before I had become acquainted with the water treatment, and must therefore be taken as my conviction at a time when I was still classed among the practitioners of drug medication.

"A physician acting on this treatment, in a case of simple fever, would, in the first place, attempt to 'cut it short,' as it is termed, by a copious bleeding from the arm, and, immediately on the limb being bound up, by an emetic. If this does not dispose of the fever in a few hours, he administers repeated doses of calomel, opium, and antimonial powder, with some powerful cathartics, in which he persists, in the expectation of causing healthy evacuations. In the meanwhile, time is found for the administration of a mixture of sudorifics and diuretics. So things go on for six or seven days, the patient being told, as regards diet, that he can take 'any little thing he fancies'—but not beef-steak or mutton-chop. At length the brain gives symptoms of being affected—delirium supervenes. Then begins the array of revulsives on the external surface; the head is shaved, ice is applied at the back and front, and a blister on the top of it. The delirium passing from the furious to the muttering kind, the tongue becoming dry and brown, the limbs utterly powerless—in short, all the signs of a typhoid state appearing—the stomach is once more tried with wine and other stimulants, the feet are blistered, and exhausted nature sinks; or if, in spite of all, the jaws of death are escaped, the body, drained of its blood, worn out after the enormous stimulation, and utterly thrown out of the rhythm of its sympathies and functions, drags through a prolonged convalescence with a tardy recruiting of the quantity, and still more slow restoration of the quality, of the vital fluid that it had lost, and of the nervous energy it had previously possessed. Even in this state, a little revulsion is essayed in the form of bitter tonics, carminatives, anti-spasmodics, &c., and sometimes a relapse into another species of fever, called nervous, is thereby brought about."*

Further on in the same work this subject has a greater development; in the course of which the following remarks are apposite to the present argument:—

"Persons called, or calling themselves, bilious, those of confined bowels, accompanied with heat of mouth, tainted breath, frequent and, to them, inexplicable headaches, having cold feet, occasional lassitude of limbs, and almost constant irresolution of mind, although constitutionally otherwise endowed; who go about their business and into society, but have not much pleasure in either—these will be found to carry about them the germs of that visceral condition which, upon some accidental cause, breaks out in acute indigestion, bilious, rheumatic, or even typhoid fever; but which, by timely rest of the digestive organs and those of animal life, without the interference of medicine, might have been easily eradicated. Instead of this, they drug themselves—are relieved; again feel ill—repeat the dose; eating, drinking, dancing, and bargaining, meantime, with all possible avidity, until outraged Nature forces them to halt, by a complete paroxysm of sickness, and thus saves those who would not save themselves.

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* Loc. cit. p. 65.

"Observations such as these are the more appropriate in this place, as I am about to speak of the treatment of several kinds of fever, which are almost invariably preceded by the sub-febrile state alluded to. Were non-professional persons better acquainted with this fact, and did they, knowing its occurrence in themselves, abandon the treatment to Nature, instead of trusting to a worn-out prescription, they would avoid attacks for which they would gladly compound by a few days' withdrawal from all business and all pleasure. Capable of moving about, yet doing so with early fatigue, they imagine their complaint to be weakness, and stimulate the digestive organs to overcome it; or, coming nearer to the truth, they suppose themselves bilious, and take physic, and devour bacon at breakfast. At length, on a certain day, after a mental shock, great exertion, a cold air in a passage or through a window, wet feet, some change of clothing, or a crowning excess of diet, shiverings seize the patient; and, according to constitutional and accidental circumstances, the symptomatic array of rheumatic, inflammatory, or typhoid fever is in a few hours established. That such is the process—that visceral derangement precedes by some time the feverish outbreaking—I have verified in hundreds of instances: and that the fever is fully developed when the irritation, in whatever viscus it may be, has become sufficiently intense to link together more or fewer organs in its morbid sympathies, those of animal life included, is, in my belief, sufficiently clear. It is not that the exciting cause—cold, for instance—has driven the blood inwards upon the viscera, as is commonly asserted; but the latter have for some time previously maintained a morbid sympathy with the surface, which rendered it unable to react upon the cause in question as it would do in the health of the internal parts. Upon these, then, as the strongholds of life, the office of re-action devolves, and hence has been not unaptly denominated an effort of Nature to bring a morbid process to a crisis; a crisis that varies in period and character with the vital energy of the patient, with the length of time during which he has neglected or exasperated the previous symptomatic warnings, and last, not least, with the amount of interference with the morbid viscera before and after the full development of the fever.

"With this view of the febrile condition (and it is one for the reasonableness of which eminent names in medicine might be cited), the propriety of violent revulsion practised on the organs of vegetative life, is, at least, very problematical. These last are labouring to effect relief for themselves by transferring the irritative action to one of the great emunctories, the lower bowel, the kidneys, or the skin—to the latter in the great majority of cases. How is this to be done, whilst means are taken to retain the irritative action in themselves? whilst calomel and antimony are exciting the stomach, and senna, scammony, and other strong purgatives, are drawing blood to the whole canal, to supply the enormous excretions they produce? whilst, as if to *force* all the emunctories together, a conflict of diuretics and sudorifics come to aid the mercurials and purgatives in making 'confusion worse confounded' in the already oppressed and irritated internal organs? It is such treatment as this that justifies the jest passed on medicine in the definition of a physician as one who, armed with certain weapons, lays about him in all directions, with at least an equal chance of extinguishing the patient as the disease. For although the patient may recover, notwithstanding the tumult into which the viscera have been thrown, the chance is considerably in favour of this tumult being extended to the great viscus of animal life, the brain, whose function is first deteriorated, and then destroyed.

"But in the event of recovery, what do we behold? A body drained of its blood (for copious bleeding is, with many, the first step in treatment), exhausted in its nervous energies, with viscera that have been subjected to every phase of irritative action, and now in the extremity of consequent collapse—dragging its enfeebled organs through a long convalescence, one function and then another stumbling on the road, and falling back into the old disorder, without the rhythm, the combination of all of them moving onwards towards health, which should mark the restoration of calm to the system. The convalescence itself is a veritable disease, a train of disorders. There is the nightly sweating, indicative of the terrible exhaustion of the frame, for which acids are given; the inappetized stomach, for which tonics are ordered; these, again, aid in constipating the bowels, already deficient in activity after the vehement efforts of secretion, to which they have been stimulated; there is the flying spasm of the abdomen, now in the stomach, and then in the lower bowel, for which carminatives are administered. Then, as regards animal life, there is the sleepless brain nightly stupified with narcotics; there is the tremor of limb and lip, that often continues for months; the hysterical condition of mind; the tendency to fainting in even a moderate degree of warmth; the nervous headache, that frequently, from this date, takes up its abode in the system for the remainder of life. Withal there is a general sensitiveness to causes of disease, that persists for a considerable time, and, coupled with the active medication still in progress, enhances the risk of fresh febrile attacks before the body shall have acquired the stamina to react against them.

"Such is the sketchy history of fever, treated according to the method which makes the internal parts the subjects of revulsive action—a method which increases the dangerous risks during the malady, causes the infliction of prolonged convalescence, and, by this last fact, exposes the frame disadvantageously to renewed disorder. And all these results flow from a neglect of the maxim, that *death comes only by the viscera*, and that too much care cannot therefore be observed in the treatment of them, when they are the seats of disorder."*

For the truth of these observations I am more pledged than ever; now that, from the vast number of chronic cases that have come before me since they were written, I have been more extensively and more intimately made acquainted with the long persistent results of the practice they describe; now, too, that in a few instances of my own practice, I have had opportunity of observing the far, far more favourable condition of patients who have recovered from fever by the means of the water-cure. It is idle to call this prejudice; on the one hand, the patients tell their own tale, and come to the same conclusion; on the other hand, it is reasonable that I should assume to use the external senses, and that internal sense which appreciates inevitable deductions, in common with the rest of the medical world. And doing so, my conviction is, that the above, the ordinary mode of treating fever, is pernicious in the extreme, puts in peril the life of the patient, and, if he dies not, burdens that life with the miseries of some chronic disorder. Again, it is idle to blame *individuals* for a *system*—a system in long and common usage; they work with the instruments they possess, and conscientiously believe to be good for the purpose. At the same time, their belief and praise neither render the system good, nor prevent the staring fact, oft repeated by patients with chronic disease, that such disease has been their lot since the treatment of acute fever, three, four, or more years ago.

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* Loc. cit. p. 112, et seq.

But if the ordinary medicinal plan be active in forming chronic out of acute disease, it is more potent still in maintaining the former. The emergencies of acute disorder, where the first thought is to save life, may afford some palliation of the rough handling of the delicate viscera in its course (though I maintain that the physician should have an eye to the consequences in life, as well as to the chances of death); but, in my opinion, no excuse presents itself for a continuance of the same vigorous medication in the chronic form, where the question of life or death is not imminent. The most superficial observation must show that *cure* never takes place from such medication, and that exasperation of the malady is the far more frequent result; while some reasoning on the intimate condition of the parts chronically diseased, leads to the conclusion that cure *cannot* take place, and that exasperation *must*.

For let us look into a chronic inflammation of the stomach and liver, commonly called *indigestion* and *biliousness*. We have in these a very exhausted and irritable state of the capillary blood-vessels of the mucous membrane which lines the stomach; and by extension of surface, the ducts of the liver. The ordinary treatment by drugs consists in the administration of mercurial medicines to stimulate and alter the secretion of bile from the liver; of tonics, such as bitter vegetables, iron, bismuth, sulphuric acid, blue and white vitriol, lunar caustic, arsenic, &c., to procure a fictitious appetite; of alkalies and opiates, to obviate heart-burn and other pains; of various spirituous and peppery articles, such as lavender drops, tinctures of cinnamon and cardamom, sal volatile, cayenne pepper, &c., to remedy the flatulence and spasm of the stomach ; and of the long list of purgatives to overcome the constipation which is the usual attendant of this dyspepsia. In each twenty-four hours the highly irritable and wearied blood-vessels are called upon to respond to the stimulation of one, at least, of each of the above classes of remedies, and from what has been shown in former chapters, the result of this is plain enough. The blood-vessels, stimulated again and again, fall into more and more hopeless exhaustion, and become more and more irritable. The blood they contain increases in quantity and deteriorates in quality, which deterioration causes the secretion of more bad bile, and more acid and acrid juices than ever, and finally leads to the deposit of unnatural solid matters, cancerous, lardaceous, &c., constituting a true *organic* and *incurable disease.* But besides this, and meanwhile, the bad quality of the bile and stomach juices is causing a bad digestion of food ; bad blood is formed, and the whole body languishes in its functions, from being nourished by a badly elaborated blood. And thus the treatment proceeds, until the medicines of the various classes being exhausted, and the patient worse, nothing remains but to go to the sea-side, to a farm-house, or to travel, during the operation of which healthful and natural stimulants some improvement takes place – the viscera have had the chance of rest, and have used it for their own preservation.

It is not my intention to expatiate on this subject, else I could show by not a few illustrations how this complex medication, this polypharmacy, necessitates the employment of each of the medicines comprehended in it, to obviate the effects of another ; how the effects of the mercurials have to be combated by the opiates ; how these, again, produce a necessity for the purgatives ; these, for the remedies for flatulence ; and these again, producing heart-burn, call for alkalies and opiates. Begin where we will the circle must be traced : the explanation of which is, that as they all unnaturally stimulate the blood-vessels and nerves of the part, these fall, after each stimulation, into another degree of exhaustion, which induces fresh symptoms to be met by fresh remedies. This alone, this necessity for heaping one remedy on the back of another, might suggest that the whole plan is radically wrong, and that the root of the malady, the essential character of it, is not attacked; else why does an evil follow each remedy, to be corrected by another remedy? It looks like a combat between the medicines, for which the diseased stomach is the arena, rather than between the disease and its curative means.

The truth is, that it is physiologically impossible to adapt such coarse means to the infinitely minute shades of irritation which constitute the essence of internal chronic disorder. Unless you can find medicines of such character, and in such amount, as, when applied, to give to the blood-vessels the exact degree of contractile power that shall rid them of the blood which oppresses them, *and no more*, you either do nothing or mischief. If the stimulation you thus apply be too small to give the vessels the power in question, not even temporary relief ensues. If it be excessive, which is usually the case, greater exhaustion than before follows, and matters are worse than before. The consequence is, *at the best*, a hap-hazard practice, and, *at the worst*, a mischievous practice—the latter, alas! being the rule; for how is it possible to hit the *precise* stimulus?*

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* "I can do it," says the homœopathist, with my specifics and my infinitesimal doses." And certainly the homœopathist comes nearer it far than the ordinary practitioner. His is a much more rational plan, which, looking to the specific irritabilities of different tissues, strives to discover the particular stimulus adapted to each tissue, and, more than that, to the numerous grades of irritation which each tissue is capable of exhibiting. This is a matter of sheer experiment and experience; and, accordingly, we find in the homœopathist infinitely more nicety and accuracy of observation than is necessary to the allopathist in his practice, where specific effects are sought for by a strong revulsive operation on the stomach alone; that is to say, the disease, however distant, is concentrated in the stomach during the operation of the medicine. Besides their having a specific effect, the infinitesimal doses of the medicines used by homœopathists are, in theory, much more likely to affect the minute and highly sensitive capillaries than the coarse and overwhelming doses of the allopathist; and this I have ascertained in practice to be the case in very many instances. It is well and wise to observe and investigate these things before laughing at them: the homœopathic doses, the three-thousandth part of a drop or grain, if you will, *is* more effectual than the allopathic ten or twelve grains, however laughable it may appear. As for the maxim of the homœopathist, that "like cures like," which has also been ridiculed, it was put in practice by the allopathist without his knowing it, until the homœopathist told him of it, since when it has been left in peace.

Still, in homœopathy as in allopathy, though not equally in both, the

Such is the mode in which the ordinary medicinal treatment becomes a cause, and maintainer and aggravater of chronic disease in the internal central organs of life—whence the mischief is propagated to any other organs of the body. And this is the case when disorder is originally in some *external* part. Thus some violence is applied to

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objection applies that the body is not allowed to throw off its own disease; without which *cure* is unattainable. There is still the *forced* change of action in the diseased part, on the permanency of which reliance cannot be placed. There is still also the employment of the stomach for all medicines, and therefore its fictitious stimulation by all. And, with these objections, although I might be induced to try to subdue a passing, but troublesome *symptom*, I could not trust to remove the *essential nature* of a chronic malady by homœopathic means. But I speak of the whole subject with diffidence, my experience being as yet limited. Not so with allopathy, the insufficiency of which has been proved to me by sixteen years' practice. How far might the homœopathic come in aid of the water-treatment?

For some time before this question was put in the last edition of this work, and since that time, my attention has been given to its practical solution. The answer, so far as I have gone, is corroborative of the aid which homœopathic treatment, general or occasional, gives to the water treatment in chronic disease. In *obstinate constipation* of the bowels, the employment of homœopathic remedies materially assists: nor is the action of the bowels consequent on their use and the water cure ever followed by relapse of the bowels into torpor, as is the case after allopathic means. In fact, cases abound in which homœopathic treatment alone has effectually and permanently cured habitual costiveness. Again, in the course of water-treatment, and not unfrequently as a necessary concomitant of its operation on the living body, *nervous headache* is apt to distress the patient. To alleviate this symptom without interfering with the general curative process is great gain, both to patient and practitioner; and it is readily effected by homœopathic means. In these and many other cognate instances I hold the application of homœopathy in the course of water-treatment, to be not only justifiable but desirable; although I should by no means employ it in all cases. Still, there can be little doubt that he who is able to use both weapons, water cure and homœopathy, against disease, has the best prospect of all men of curing it. Indolence, or bigotry, or low quackery may induce men to swear by one remedial plan only; but the physician of enlarged mind and conscience knows that his art is not so certain an one as to warrant the indolence which sleeps, the bigotry which closes the eyes, and the charlatanism which refuses to see anything but sordid interest.

Homœopathic practitioners have observed that patients under the water cure are more susceptible to the action of their remedies than other persons, and that therefore the results may be more accurately calculated. I have found this assertion to be substantially correct; and it confirms the vivifying influence of the water cure over the bodily functions.

an arm or foot, the irritation of which, conveyed to the internal organs, produces disorders there, and feverishness. To these organs, thus sympathetically excited, irritating aperients, &c., are applied, as is usual in fever, the consequence of which is the establishment in them of an irritation which radiates again towards the diseased limb, where a similar establishment is made. The limb proving obstinate, the pain, heat, swelling, &c., continuing, notwithstanding the cooling purgatives administered; a course of mercury is the common resource—why, is not very clearly ascertained—to which opium is sometimes added, to produce a sudorific effect. By this both internal and external irritation becomes more decidedly chronic; and this is further aided by courses of iodine, iron, arsenic, &c., in succession, all given with the view of, *somehow or other*, ridding the limb of the congested blood it contains: it, apparently, never occurring to the administrator that, by producing chronic disease within, he is taking the best means of perpetuating it without. I have known this go on until the patient was fairly told that, everything having been tried in vain, there only remained amputation of the leg—an alternative to which he preferred the water treatment, assuredly fatal, as it had been represented to him. He walked without crutches in six weeks!

It is by such a process as this that *rheumatism* and *tic* of the limbs are maintained by the very means intended for their relief—that *skin diseases* are inveterated, and *old ulcerations* kept open. You establish chronic irritation at the centre, and thereby keep it up at the periphery. The rule is invariable.

Stimulating diet acts in the same manner as a cause of chronic disorder. Yet, well ascertained as this is, it is at once painful and wonderful to behold the laxity of practice regarding it, both in the medicinal and water treatment. In the former, this want of stringency is attributable to the facility with which the *immediate* results of indigestion are avoided by medicines, no thought being given to the *ultimate* and *lasting* effects of both. This renders both patient and practitioner less anxious on this all-important point. In the water treatment, as it is very often practised, the same remark is to be made; but I shall have to renew the subject in another part of this work.

As the brain and spinal cord represent an immense mass of blood-vessels and ganglionic nerves, and are thereby kept in a state of close organic sympathy with the central portions of the organic nerves, and thence with the rest of the body, it might be expected that irritation of those organs would tend powerfully to cause and maintain chronic disorder; and constant experience shows such to be the case. Intellectual labour and moral anxiety, each or conjointly, keep up the derangement of other parts; the latter, perhaps, doing it more intensely than the former. To

> "Pluck from the memory a rooted sorrow,
> Raze out the written troubles of the brain,"

is an unavailing endeavour when the sympathies of the digestive organs have been involved; for these, in return, maintain the irritation of the brain, and the unlucky patient is the prey of two chronic mischiefs, which few can long withstand. Cause and effect become confused, and the practitioner is puzzled where to begin. It appears to me, that if the core of life in the chest and abdomen can be put into a condition so as more steadily to resist impressions from the brain, the latter receiving fewer irritations from that point, the mind will be thereby better enabled to struggle with its load and throw it off. In fact, unless the mental distress prey upon the digestive organs, it is certain not to last: the proverb, "that a hard heart and good digestion go together," is based in truth: he who knows not suffering is the least likely to pity it in others, or be anxious for any one. Whilst, therefore, it is of course advisable to remove the moral cause as far as may be, it is, at least, quite as necessary to avoid additional irritation of the abdominal organs, the stomach, &c.; and, looking to this, we must observe the folly of giving stimulating diet and medicines to dissipate moral clouds; they can only thicken the gloom of the mind in proportion as they complicate and inveterate the physical disorder. Wherever the mischief begin, therefore, I should, above all, have a care of the viscera and ganglions.

Care, anxiety, and grief more especially, give rise to chronic *nervous dyspepsia*, *diseased heart*, *pulmonary consumption*, and *dropsy*, the rationale of which is sufficiently obvious from what has preceded. They also originate, by the medium of the stomach, certain forms of skin disease, such as scaly-tetter (*psoriasis*), and dandriff (*pityriasis*) which diminish and exasperate with the mental condition.

Intellectual labour, if sedentary and silent, produces rather chronic mucous than nervous dyspepsia, *obstruction of the liver*, and, as a consequence of that, *piles*. But it generally leaves the viscera of the chest, the heart, and lungs untouched. The preceding paragraphs would lead us to expect what really happens, that if to such labour any of the passions, or care, be added, the results to the entire viscera of the chest and abdomen would be most destructive. The experience of medical men could tell of many obscure, yet useful labourers in literature, whom this double load broke down and pressed into an early grave, demolishing one function after another—the exhausted brain sometimes giving way the first; and similar histories of authors more "bruited in men's ears," are familiar to all of us. And whilst we may deplore their fate, we must not forget to recal in how many of them the glorious gift of Thought was misused in the practice of sins against the bodily organization: of intemperance, which multiplied and aggravated the ills which Providence had thought fit to try them with; for the same Providence ordains that man, to whom a lofty brain has been given to control his viscera, shall pay a heavy penalty when he employs it in committing outrages on them; and these the glutton, the drunkard, and the drug-eater do daily commit.

If, however, labour of the intellect be accompanied with much employment of the lungs, as in parliamentary and forensic debate, or hustings' eloquence, the consequence, in the shape of nervous and mucous disorder of the digestive organs, are neither so rapid nor so intense: and this, because the *waste* that attends the exercise of the lungs calls upon the digestive organs for fresh supplies, thereby quickens their function, and thus prevents that congestion of blood in them which constitutes their own chronic disorder, and maintains that of the brain or of any other part.

Such are the causes which tend to the establishment of chronic disease in any tissue or organ of the body. They all become causes by inducing or implying a feebleness and irritation of some portion of the centre of the organic system of nerves, and especially of that which corresponds to the starting point of the body's nutrition, the stomach and liver; and it is the vitiation of the nutritive energy at its source and core which keeps up a similar vitiation of nutrition, called chronic disorder, in distant parts of the frame. Without it there is no chronic disease; with it, such disease is inevitable and incurable.

Of the progress and terminations of chronic disease in general much need not be said in this portion of the work, as I shall have to speak of those which mark individual diseases, in another portion. Dividing the latter into internal and external, a few observations may be made on each group.

Chronic disease, which is confined to some internal part, is usually the most destructive. It has no counteracting irritation on the external surface, but concentrates the whole morbid action within. *Pulmonary consumption* is an instance of this; so is *neuralgia of the stomach*, a form of *nervous dyspepsia; ulceration of the bowels;* and that irritation of the small bowels which causes *atrophy;* in none of which is there any external eruption or pain to diminish the destructive work going on within. Diseases of this kind, therefore, have a certain and rapid progress and termination. Failure of the digestive energy is the cause of death in all. In pulmonary consumption, for instance, the patient suffocates for want of muscular energy to expectorate, which feebleness is due to deficient nutrition of the nerves and muscles that are used in expectoration, whilst the deficiency in point is the result of mal-digestion of the stomach in a state of chronic irritation. Had the stomach been in sound digesting order, the patient would have lived on, notwithstanding the drain by expectoration. In the other instances quoted, the same failure of nutrition is the reason of the downward progress and extinction of the individual.

But, although in such internal chronic diseases there be no external counteraction of skin or other disease, an attempt is frequently made in the course of them, by the disordered organs, to throw a portion of their irritative action on the external parts, or upon those parts less essential to life, such as the lower bowel. Under this head come the *hectic fever*, that so often accompanies chronic disease of important organs; and the sweatings and diarrhœa. Febrile attacks, also, of a more ordinary kind, the simple inflammatory and bilious fevers, mark periods of internal malady when the vital organs strive to cast their mischief from them; and more or less successfully, too, if they be not meddled with by officious medication; in which case the chronic malady is re-concentrated internally with augmented fixity. Patients are always better after such an outbreak: it is more or less critical; but the condition of this is, that it be the result of the *natural* efforts of the diseased parts, not by forced means of stimulation. Sulphate of iron will *wind up* the stomach in nervous dyspepsia to the feverish effort; but woe to the patient who flatters himself that it is critical of his dyspepsia! Like all *forced* crises, it inveterates the mischief.

These feverish uprisings in the progress of internal chronic malady are coincident with a lighting up of an acute condition in the diseased organ. The symptoms are all those of that condition, and the usual chronic symptoms are wanting. The sufferer from chronic dyspepsia, who had a good appetite, loses it in this acute stage, becomes thirsty, having previously no thirst—exhibits, in short, all the differences between acute and chronic indigestion. The same takes place in long-standing inflammation of the air tubes of the lungs, the patient now and then being threatened with suffocation from acute inflammation extending lower down the tubes towards the spongy substance of those organs. The internal condition which is essential to *gout* and *tic douloureux*, is likewise subject to these exacerbations, accompanied of course, with increase of the gouty and neuralgic pains.

It is by no means easy to explain these explosions of acute disorder in the progress of chronic disease; the more, as they very frequently occur without any detectable cause whatever. To me they appear as so many efforts of the vital organs to recover themselves by bringing about some critical termination, and re-establishing the balance of circulation and nervous power, for such is not unfrequently the result; and where it is not, some new, and mostly improved feature is given to the chronic malady. Further than this, it is mere conjecture to speak regarding the cause of these acute attacks. They evidence the restorative power of the body; and as they do *not* occur when the exciting cases of the disease are continued in full operation, it may be said that such power accumulates for healthful purposes whenever those causes cease, even in degree, to operate in exhausting it. The dyspeptic patient who persists in the use of irritating food gives no pause for this accumulation: he is wasting the power as fast as it can be generated, and a time comes when it *cannot* be generated, and then comes organic disease, wasting, and death; whilst, if the food be changed in quality and diminished in quantity, the restorative effort is sure to be made, sooner or later, with greater or less vigour and effect. And according to the degree of these is the fact of a *broken or unbroken constitution:* in the one, the effort being feeble and ineffectual; in the other, powerful, and making some step forward. In this view, these uprisings of the constitution under chronic disease are important to be observed, affording to the physician a criterion of probable success or otherwise, from the acuteness or atony displayed by the body; and in speaking of the *modus operandi* of the water treatment, I shall have occasion to call attention to them as almost invariable attendants of its course.

In a previous part of this volume, I have shown that the nervous system first involved in disease is the ganglionic, or that which has its central portions in the abdomen and chest. In very acute diseases—such as are almost sure to prove fatal—the implication of the *animal* nervous system, the brain, and spinal cord, is rapid; and complete prostration of will, delirium, more or less paralysis, convulsion, spasm, or stupor, attending the latter stages of the disease. In chronic disease, the same implication usually takes place, sooner or later. But here the phenomena are more varied, because they have a less violent and more varied cause, are produced more slowly, and can be observed more deliberately; independent of all which, they are different from those which exhibit the implication of the brain in acute disease. Morbid anatomy demonstrates that a vast amount of chronic disease of the organs of the abdomen and chest is compatible with total absence of disordered phenomena of the brain. Men have died of stomach disorders that, from their state, as shown after death, must have existed for years, and yet were never felt by the brain, nor even produced in it an ache, giddiness, confusion, or any other morbid sign. In such persons there can be no doubt that a congenital deficiency of nervous communication between the viscera of the abdomen and chest and the brain obtains, or that a want of vivid nutrition obtains in the latter. But this is the exception. The rule is, that the morbid irritations of organic nerves are transmitted to the brain and spinal cord, becoming more intense in character as the chronic malady inveterates. The variety of the phenomena is great, and depends on the ganglionic viscus affected, and on the numerous gradations of that affection. Thus, one sort of stomach irritation generates that peculiar brain irritation which is accompanied with the mental symptoms of *hypochondriasis;* whilst another sort shall gradually induce *apoplectic fulness*—another *paralytic congestion* of the brain. So chronic irritation of the womb involves the brain, so as to cause the capricious storms of *hysterical passion;* or the spinal cord, so as to produce *hysterical palsy.* These are the extremes of the scale, below which we find simple *headache* of a nervous or mucous character, *confusion of head*, *irregular vision*, *hearing*, *taste*, or *smell; dreams*, both sleeping and waking; *irritability of temper*, *twitchings of the limbs*, *asthmatic breathing*, *irregular neuralgic pains*, &c., &c. All these, and many more, are symptoms of that disordered nutrition of the brain and spinal cord which sooner or later takes place in the progress of chronic disease of other parts.

I say "sooner or later" only with reference to the varied susceptibility of individuals, and the varied amount of original ganglionic, visceral disorder; the implication of the brain taking place more rapidly when that organ is highly susceptible than in others, and *vice versâ.* But as regards the actual period of such disorder, it only involves the brain after it has existed for some time—that is, later rather than sooner. It would appear that the ganglionic mischief is confined, as regards symptoms, to its own system of nerves for a certain time, and up to a certain stage of irritation. Arrived at that stage, it is sufficiently strong to elicit the phenomena of the brain and spinal cord, mentioned in the last paragraph; and then *nervous* symptoms, as affections of the *animal* nervous system are peculiarly called, are added to the previous ganglionic irritation. Doubtlessly, from the very onset of the latter, morbid sympathies were sent up to the brain—it is impossible to suppose otherwise, in such a complicated and highly organized frame as the human; but these are not of sufficient intensity to be shown in the form of symptoms. Once established, however, they complicate the chronic malady, hasten its progress towards organic disease, and multiply the obstacles to the successful appliances of medical art.

Further, there is a gradation of nervous phenomena observable in the progress of chronic disease. At first, they are those which indicate *augmented* circulation and nutrition of the brain matter,—such as headache, disordered external sense, want of sleep, mental irritability, hysterical sensations, &c. But as the mischief increases, symptoms indicating *oppressive* circulation of blood in, and diminished and vitiated nutrition of, the brain are observed—such as depression of spirits, unwillingness to move, hebetude of mind, amounting sometimes to stupor, hypochondriacal brooding, &c.: the rationale of all which may be given in a supposed case, as thus—

A person has a chronic mucous indigestion—that is, a chronic inflammation of the mucous membrane of the stomach. For some time there are inappetence, fulness, constipation, thirst, &c.; symptoms referable to and residing in the disordered viscera themselves. After a time, and consequent on the continuance of the causes, and, perhaps, the additional irritation of tonic and purgative medicines, the mucous inflammation becomes so intense and fixed as to invade and involve the nervous networks and ganglions that pervade the digestive viscera: nervous indigestion is superadded to the simple inflammatory. Then begins the series of symptoms which show the implication of the brain and spinal cord—symptoms expressive of increased quantity of blood in those great nervous centres. This increase goes on until the pressure of blood upon the matter of those organs interferes with its functional activity: sensation, thought, and volition, become more and more obtuse and slow, until you may have total suspension of all of them in apoplectic stupor, or of sensation and volition in paralytic helplessness.

Such is the too frequent history of chronic visceral disease, complicated with brain disorder. The confirmation of the view just taken of the progress of the complication in question is curiously enough exhibited by this fact—viz., that in the first stage of nervous complication, all that goes on in the digestive viscera, the irritation and weight of every meal, the rolling of every volume of air in the bowels, and such like dyspeptic signs, are accurately and acutely felt by the sensitive morbidly active brain the patient complaining of them, and often dreading to eat from fear of these consequences; whilst in the second or oppressive stage of brain complication, these abdominal sensations are infinitely less complained of, the patient mostly asserting that he has no stomach disorder, because he has no uneasy sensations after food, &c. In the former we have excessive activity, in the latter deficient evolution, of brain power: in the former, sufficient blood in the brain to augment its function; in the latter, sufficient to oppress it. And we shall find, further on, that in retracing the steps to health, these two degrees of brain irritation are retraced also.

There are several more circumstances in the progress of chronic disease which might be mentioned, but which, as they occur exclusively in individual maladies, are better postponed until these last are treated of. Instances of these circumstances are the variations of cough and expectoration, in certain stages of chronic lung disorder; attacks of jaundice, and variations in the bile in the excretions of the bowels and kidneys, in chronic liver disease; and the appearance or non-appearance of chalky deposit, in the course of gout. Meantime, the phenomena common to all chronic diseases in their progress having been given, I pass on to speak of the *terminations* to which they are liable.

These,—the causes not being removed, and irritation not avoided—are inevitably fatal if the seat of the chronic malady be in the viscera alone. If there be skin disease —*i. e.*, an external irritation, at once symptomatic of, and counteracting to that internal irritation which is the main disease—not life perhaps, but life's comfort, is more or less destroyed, similar negligence er malpractice as to causes being supposed.

The death of the body in such instances is induced—

1st. By obstacles to the nutrition of the body, the process or waste meanwhile going on.

2nd. By the passage of chronic disease into organic disease.

3rd. By apoplectic congestion and functional stoppage of some important organ.

4th. By effusion of fluids into different cavities, either with or without ulceration of the viscera.

I. In many cases these two first causes of death are combined, the organic disease being the obstacle to the body's continued nutrition. Thus, *cancer of the stomach*, by causing the incessant rejection of food, precludes the renovation of parts which the process of absorption and waste is incessantly carrying off. *Organic disease of the mesenteric glands* stops the passage of the chyle from the alimentary canal to the circulating blood, and, thus arresting the renovation of the latter, leads to the death of the functions. *Stricture of the gullet* kills, likewise, by stopping the supply of food. And there are a few more examples of the same kind.

But obstacles to the nutrition of the body sufficient to produce its death exist in chronic disease without the intervention of organic disease. The failure of ganglionic nervous energy is attended with failure of all appetite for food; and not only that, the same nervous exhaustion leaves the animal chemistry of the stomach without due control, and secretions are poured out which render the digestion of whatever aliment is taken bad, the subsequent blood-making imperfect, and the nutrition of the body, therefore, imperfect also. Waste, meantime, proceeds, and the individual perishes. This mode of death obtains in various forms of dyspepsia, especially the nervous. Emaciation may go on to a great extent before this termination, but not necessarily. If the brain cease to be supplied with sufficient blood of proper quality for its office, fainting may occur on some exertion of mind or body; the heart, imperfecly nourished and deprived of its ganglionic power, may be unable to renew the circulation of the brain: the animal being dies in consequence, and the organic being soon follows; and this may happen long before the patient reaches the point of atrophy, and it demonstrates the practical necessity for rest of the animal nervous system in such maladies.

Again, in chronic diseases of the small intestines, whence the chyle is absorbed to be carried into the circulating mass of blood, the inflamed and gorged condition of the mucous membrane upon which the chyle ducts debouch, suffices to stop up their orifices, and thus to prevent the recruiting of the blood by the chyle. This is the cause of death in what is called *atrophy*, both of adults and infants; in the latter it is a frequent occurrence.

What is called "dying from nervous exhaustion," means that a long course of imperfect nutrition has gone on: that poor and deficient blood has deposited poor and deficient solids; that the nervous solids have partaken of this imperfection to such an extent, that they are unable any longer to impart that energy to the muscular and other *moving* solids which enables them to continue the circulation of blood. This last failing in the brain, the animal, and then the organic being dies—not so much of nervous exhaustion as of insufficient nutrition. It is the kind of death which terminates the chronic sufferings of those whose overwrought intellect or feelings have annihilated the digestive powers of their bodies, and of others who have arrived at the same end by the more material excesses of child-bearing, child-nursing, and amorous propensities; all act by impairing the digestive energy. In short, in this and the two modes of death previously cited, the patients die of starvation.

II. The passage of chronic disease into organic is not difficult of explanation, according to the doctrine laid down in the earlier part of this volume. The morbid nutrition going on in the diseased organ, wherever that may be, and dependent on the vitiated vitality of its blood-vessels and organic nerves, is aided by disorder at the centre of nutritive life, the digestive organs, where morbid coction of the food entails morbid blood to flow through the system and nourish the organ already exhibiting an unnatural state of nutrition in its tissue. If the patient have no hereditary tendency to deposit tubercular or scirrhous tissue, simple excess of deposit of the natural tissue (simple hypertrophy) generally ensues and constitutes the organic change; in which case, the mass of circulating blood not being so much diseased as in the constitutional tendencies alluded to, the local derangement of nutrition suffices for excessive deposit of the natural tissue alone, and not for unnatural deposit. *Hypertrophy of the brain*, *simple active enlargement of the heart*, *swollen liver and spleen*, *and thickening of the mucous membranes*, are instances of this kind of organic disease; the effects of which on the general system may be palliated for years, and even some reduction may be made, by nice art, in the enlarged structure itself. When the hour is come for it, *hypertrophy of the brain* kills by causing pressure on and exciting inflammation in the brain and its membranes, the result of which is also effusion and pressure; so that the animal is extinguished, and the organic parts, losing the vital stimulus from that source, rapidly, though sometimes very gradually, sink, too. *Enlargement of the heart, swollen liver, and spleen* destroy by inducing congestion and dropsy of the trunk and limbs; they all obstructing the free return of blood to the heart and through it, the blood therefore remains in the small vessels, which become congestive, and relieve themselves by pouring out the watery parts of their contained liquid. But the former of these diseases also kills by the lungs, the return of blood from which being obstructed, the patient is suffocated either by their inflammation, or by *pulmonary apoplexy*, that is, effusion of blood into the spongy texture of the lungs. It is obvious that *thickening of the mucous membranes* is fatal, by virtue of preventing the functions of the important viscera in which those membranes play the most essential vital acts; upon these individually it is at present unnecessary to expatiate.

Where the organic disease consists not in a simple enlargement, but in an utter disorganization of a part, death takes place in consequence of excessive irritation and oppression of the brain and spinal cord, or by similar oppression induced by the retention in the blood of elements which ought to have been eliminated by the morbid organs. Instances of this are the disorganized and *hardened liver*, and *disorganized kidney*. In the former, the elements of the bile—in the latter, those of the urine, are carried round with the circulating blood, and either produce inflammation and effusion on the brain, or else the bile and urine are actually deposited in the brain matter, whose function they effectually stop by their presence. In the one case, bile is seen, in the other, urine is smelt, in the brain. It should not be kept out of sight that, in such cases, chronic digestive disease has long preceded, and now accompanies, and that deficient nutrition plays a part in the fatal result.

That result is, if possible, still more certain, where the organic disease is of tubercular or cancerous character; for in that case the whole mass of blood is diseased—the whole nutrition of the body is unnatural, and even if it were practicable to change that mass, the organic tendency remains, and cannot be changed. Yet the mere deposit of tubercles and scirrhus is not in itself fatal: if by any means the *inflammation* of those morbid structures could be prevented, they would be compatible with life. Unfortunately, the very fact of their morbid character renders them less able to resist the causes of inflammatory action than the normal textures of the body. Themselves the product of deteriorated vital energy, they exhibit the least possible energy in opposing and casting off irritating agents, even the least so. Slowly inflammation is established in them, and surely it saps the foundations of life. No matter where the morbid deposit be—tubercles in the knee joint (*white swelling*), or cancer in the nose—an exquisite sympathy with the stomach is maintained, a stomach that had long been in a state of chronic disorder.

The immediate process by which life is extinguished in such cases, is a periodical attack of fever, ending in profuse perspiration, and by the, generally, enormous discharge of fluids from the diseased points. The waste consequent on these two exhausting processes, leads to an increased activity of the digestive organs to replace it. In tubercular consumption of the lungs, of the knee joint (*white swelling*), of the bones of the spine (*lumbar abscess*), as well as in *open cancerous ulceration*, the appetite is ofttimes very great, and not unfrequently extends to alcoholic stimulants. After a time, however, the digestive power of the stomach, unnaturally taxed as it had been, gives signs of diminution; add to which, that the excess of labour to which it has been subjected, tends to increase the inflammatory irritation of the stomach which preceded, and now accompanies, that of the diseased tissues. The event is, that waste by the lungs, &c., goes on faster than supply from the digestive apparatus; blood becomes deficient in the system; the animal nervous system, the brain and spinal cord, feels this the first, having the greatest need of a full supply of it, and dies from want of nutrition. In *pulmonary consumption*, moreover, the failing nutrition of the brain and spinal cord causes failure of the nervous energy sent to the muscles which move the chest, and effect expectoration, until some large quantity of secretion rising into the air tubes, the patient is unable to disengage it thence, and suffocation takes place.

Such is the end of chronic disease terminating in organic change, and it bears out the assertion that, as during the time the disease remains a *functional* one, it does so by virtue of the morbid irritation of the central nutritive organ, the stomach; when it has passed into the stage of *organic* disease, death takes place from exhaustion of that organ, and consequent failure of the process of nutrition.

III. The termination of chronic disease in apoplectic congestion and functional stoppage of some important organ, is instanced in *apoplexy of the brain, and of the lungs.* The former supposes a long previous irritation of the stomach and liver, the organic sympathy between those parts and the brain maintaining the latter in a state of super-vitality, and drawing to it an excess of blood, the pressure of which at length annihilates the brain function: or the sympathies with the stomach induce slow inflammatory action in some portion of the brain, disorganization takes place there, and rupture of more or fewer blood-vessels; and the outpoured liquid acts, as the excess *within* the vessels did, by pressure and extinction of the cerebral function.

A process in some degree similar takes place in *pulmonary apoplexy*, in which the outpouring of bloody secretion, or the bursting of sundry blood-vessels into the spongy texture of the lungs, renders that texture solid, impedes the entrance of air, and respiration—prevents, therefore, the chemical changes necessary to be operated by the air in the blood, so as to render it fit to nourish the body, thereby stops the brain function, and kills the animal. The rapidity of this morbid act varies. As a consequence of chronic disease of the lungs only, it is often slow, and in that case it is more usually brought about by a gradual secretion of sanguineous liquid from the inflamed air-vesicles of the lungs; but it is sometimes the consequence of organic obstruction in the heart, in which case it is generally fatal in a very short time, not unfrequently in a few minutes. The organic change in the heart which causes this catastrophe, is, for the most part, ossification of the valves of the *aorta*, and thickening of the muscular substance of the heart.

IV. Chronic disease of the abdominal viscera sometimes ends in ulceration of their mucous or lining membrane, which eats through its substance, and allows its liquid and solid contents to be poured into the cavity made by the peritoneal or investing membrane. The result is, immediate and rapid inflammation of that membrane, vomiting, fever, and death, in a few hours. The most usual localities for this ulcerative inflammation are the stomach, especially towards its lower or duodenal end, and the lower or great intestine. From the former, the food and mucous secretion is poured out through the ulcerated orifice, and from the latter, the mucus and fæces. Sometimes volumes of air escape from the bowels into the same cavity, or are secreted in it; but this is not necessarily fatal.

In the lungs, chronic irritation, especially if accompanied with asthmatic breathing, sometimes ends in perforation of the sides of the air tubes and vesicles, and the escape of air into one of the cavities of the pleura, the consequence of which is, continually increasing oppression of breathing, the air *outside* of the lungs pressing upon them so as to prevent their expansion, and this goes on to suffocation.

In these various terminations of chronic disorder we have the exemplification of the fact insisted on in these pages, that "death comes only by the viscera;" and that, as the disorder of those organs, in their character of centres of nutritive activity, maintains chronic disorder in other parts, by maintaining nutritive disturbance there, so, when their own chronic disease terminates fatally, it is by arresting their own nutrition and, *ipso facto*, that of all parts of the economy. It is reasonable to suppose that the same central nutritive organs which have for years kept up morbid sympathies all over the frame, should, when worn out of their nutritive energy, draw all other parts with them into extinction. Gout in the foot never kills, but gout in the stomach does; and why? Because so long as the irritation of the digestive organs, which is the essential of gout, is thrown upon the foot, those organs are safe. But when they have no longer energy to do this, the disease oppresses and arrests *their* nutrition, and all is darkness and destruction for the rest of the body. Truly, these viscera, and these visceral ganglionic nerves, deserve more notice and better usage than they generally get! And they should always be thought of in conjunction. It is because the "stomach and bowels" are in view, and not the myriads of exquisitely sensitive nerves which endue them with life, that such monstrous medicinal extravagances are practised on them for months together as to astound one at the reckless courage that prescribed them. One stands aghast at some of them!

So much for the *fatal* terminations of chronic disorder, to which it is most ordinarily driven by the irrational system of meddling with every symptom, great or small, which may arise—that *nimia diligentia*, for which both patient and physician are often responsible; the latter listening to the impatience or prejudice of the former, rather than to his own judgment. To this may be added, the persistence in the causes of the malady, improper diet, bad habits of life, excessive mental toil, &c. Indeed, the two play into each other's hands; the essential of the disease inveterates, and the symptoms multiply, because the causes are maintained in action; and patients are led to continue, or to make no efforts to cease these last, because they find in medicinal means a way to lull for a time the urgency of individual symptoms. And so the mischief accumulates, until an organic disease puts the long-cherished self-deception to flight, and places death *vis-à-vis* the alarmed and doomed sufferer.

And where nature is afforded the opportunity of exerting the strong preservative faculty she possesses, by withdrawing the exciting causes on the one hand, and by ceasing the perturbing influences of complicated medication on the other, she not unfrequently brings about a recovery, more or less complete, according to the quantity of the faculty in question that remains. If the organization and consequently the vitality of the viscera, which are the seats of this faculty, have not been already too far deteriorated by the agencies just mentioned, an effort is made to transfer the chronic irritation of the viscera to some less important organ or organs, which usually relieve themselves of this transferred action by the outpouring of some secretion, generally excessive in quantity and morbid in quality. Thus it is that sweating, purging, and large secretion of turbid urine, terminate certain chronic diseases favourably, the irritation of some vital organ being thrown respectively on the skin, the lower bowel, and the kidneys; and the gorged skin, and mucous membrane of the colon and kidney pouring out excessive materials in order to relieve themselves. Sometimes the effort of removal is so sudden and so great as to excite perturbation of the entire nervous and circulating systems, and the series of turbulent phenomena called, collectively, *fever*, are exhibited; which end, however, in sweat, bowel or kidney secretion, or occasionally in all three. At other times, the internal congestion of blood which constituted the chronic disorder is, by a slow process, converted into a congestion of the skin, and more especially in certain points of it, forming, if the congestion be superficial, some efflorescence or eruptive display; or, if it be more deeply seated, collections of pus, boils, &c.

It appears, then, that spontaneous and extraordinary secretion from the skin, from the mucous membrane of the kidney, an attack of fever, various eruptions of the skin, are the most ordinary of the *favourable* terminations of internal chronic disorder. I have not mentioned in detail the cases in which each of these terminations is most common and most effectual, because I shall have occasion to do so in speaking of the individual chronic maladies. Meanwhile, let it be borne in mind that each and all of these terminations have occurred, and may occur *without the intervention of any art*, save that of removing the causes, *and by the sole effort of nature.* The annals of medicine afford abundant instances of the removal of inveterate and serious internal maladies by the supervention of itch, of external abscesses, of small-pox, of inflammatory fever, and of copious sweating, purging, and micturition, at a time when all remedies had long been laid aside as useless, and attention paid only to the avoidance of those things which palpably exasperated the malady. This was and could only be the result of that uprising of nature to throw off disease of a character which, if continued, must prove fatal to vital parts, to which allusion has been already made; and which, often before but unsuccessfully attempted, at length *did* rid the vital organs of their "perilous stuff" and destructive action. And remark, that this conservative power can only be successfully exercised, when the original irritating causes are removed, when the additional irritating cause of medicinal meddling with the viscera is avoided, and when the viscera, at rest from excessive stimulation, and called upon to enact only just so much of their function as is necessary for the maintenance of the organism, accumulate in time sufficient vital energy to make the final, the critical effort for their own preservation.

Now, this natural effort, this self-preservative process, is precisely imitated and aided by the rules and appliances of the water cure: imitated, inasmuch as, observing what is the *natural* crisis of each disorder, the means are applied which tend to the production of it; and aided, inasmuch as, in consequence of the artistical and strict removal of exciting causes, by which the body is placed in the best condition to aid itself, and in consequence of the additional tone given to the frame generally, and the derivation made from the diseased organs by the details of the water treatment, by which the efforts of the body are seconded, the time necessary for the production of the natural favourable termination is considerably reduced. All this will receive further development in these pages. It is mentioned here, because it is impossible for one who *knows* the agency of the water treatment, to avoid allusion to the complete parallel between the ways taken by nature and the means included in that plan of treatment, whenever the subject of the natural and favourable terminations of chronic disease is brought forward.

Other favourable terminations of chronic disease are to be noted, which are, or appear to be, independent of any transfer to the external surface. Internal ulcerations are known, on some occasions, to have healed. Thus, the inspection after death of the stomachs of individuals who had suffered long from dyspepsia, has exhibited in the mucous lining of that organ marks of healing after ulceration; but it does not appear that any notable amelioration of the dyspeptic symptoms attended it, and it may be quoted rather to establish the possibility of the healing of internal ulcerative inflammation, the tendency of which is mostly mortal, than for any practical application that can be made of it. We can only give a wide conjecture, during life, that such a saving process is going on; and, if we knew, it would only alter our prognostication of the result of the malady—not help us in the treatment of it.

This applies to tubercular ulcerations of the lungs, traces of the healing of which, at some long period before, have been discovered after death. These are the only instances of pulmonary consumption being cured—cured by nature, for the physician is not even aware of what is going on in these cases. It is, therefore, impossible to say under what circumstances this favourable event of a deadly malady took place; but it should be stated, that the ulcerated cavity in all the cases on record must have been very small, judging from the mark of the cicatrix left behind—in no instance larger than a horse-bean. Scant ground this on which to build a hope in so invariably destructive a disease!

There is one organ, the liver, which occasionally rids itself of chronic disorder without transference of irritation to other organs; and it does so by the simple outpouring of its own secretion, the bile. This is shown in the improved character of the evacuations from the bowels—of the urine, which becomes better coloured—of the skin, which, from yellow, becomes clear—of the taste, which ceases to be pervaded by bitter, &c.; and all this without any diarrhœa or sweating that could call attention. The organ would seem to have accumulated sufficient ganglionic vigour to recommence the due performance of its function. The circumstances which bring this about will be given when speaking of the chronic maladies of the liver. Meantime, it may be mentioned, that the morbid condition which can be obliterated by this process, independent of all critical transfer, is, as might readily be supposed, of no very intense or long persistent character.

This terminates what is necessary to be said on the subjects included in this chapter. These subjects—the causes, progress, and terminations of chronic disease—might be made to occupy the entire of such a volume as this; but besides that in such case much verbosity would be perpetrated, the treatment of a subject generally, calls only for the enunciation of points of similarity, leaving the points of divergence to appear in treating the different parts of the subject individually. The general facts of chronic disease have been here announced without any attempt at extension, which, after all, might only have rendered the matter more obscure by complicating the manner; whereas, as they stand, they will be found, I believe, sufficiently intelligible. Besides which, the pretensions of this volume altogether are only those of an elementary, not of a systematic treatise. Yet is the subject of chronic disease well worthy of the latter; and it is to be hoped that a writer worthy of the subject may be found. The outlines, at least, will be found in the preceding pages.

PART II.

OF PARTICULAR CHRONIC DISEASES, AND THEIR TREATMENT.

CHAPTER I.

DISEASES OF THE PRIMARY NUTRITIVE ORGANS.

Reasons for placing the digestive or primary nutritive organs in the first place for consideration—Basis of arrangement for diseases of other organs—Mucous and nervous indigestion—Fallacy of old definitions—Effects treated as causes—Rationale of morbid symptoms—Sinking, fulness, gnawing, and spasm of stomach—Flatulence—Excessive and deficient appetite—The throat, tongue, gums, and teeth, in dyspepsia—Symptoms in eyes and ears—Symptoms indicative of morbid sympathy with brain and spinal cord—Comparative results of mucous and nervous dyspepsia—Rationale of treatment—Cases in illustration.

The general development of the subject of chronic disease given in the antecedent chapters affords a sufficient reason for the arrangement of the individual diseases which it is my purpose to make. We have seen how disease commences, in the great majority of instances, in the central organs of life—the digestive organs; and how, when it commences elsewhere, its chronic character is determined by the implication of the digestive organs. No pathological fact is better established; and it would suffice to place their maladies in the first order for examination and elucidation. But physiological considerations also strengthen their claim. Dependent as the entire organism is for its functions on the due supply of blood, as regards quality and quantity, the digestive organs, in which the primary elaboration of that liquid is effected, necessarily influence the very first condition of vitality in all other organs. If the condition of the stomach be such as to preclude the digestion of food, or to produce a bad digestion of it, either no blood at all is formed, or blood of a bad kind, unfit for the purposes of nutrition, and the organs of the whole body languish, or are diseased in their nutrition. In this manner they go far to regulate the nutrition of the rest of the body; and as the *pabulum* for nutrition is first made in them, they claim the appellation of "primary nutritive organs."

Further, the digestive organs influence the other parts of the body by the fact, that in and about them is the central portion of that ganglionic system of nerves whose office is to regulate the distribution of blood in, and therefore the mode of nutrition of, each organ, however near or distant. By virtue of this system, not only do organic sensations proceed from the stomach to the remotest portion of a limb, but the nutritive activity of this last is conveyed to and recognized by the stomach. When the stomach has been for a long time without food, the feet become cold—in other words, the circulation of blood in them is diminished, and the heat, given out from the blood, also diminished—an organic sensation has proceeded from the stomach to the foot. When in such a state the limbs are exercised in walking, &c., the want of sufficient nutritive liquid in the limbs so in action is announced to the stomach by an organic sensation transmitted to it by the ganglionic nerves, and the result of which is to beget hunger in the stomach, in order to urge to the formation of more blood. And so of every organ of the economy. So that whether the digestive organs be looked upon as the primary laboratory of the blood which is to nourish the whole frame, or as the centre of the system of nerves which is to regulate that nutrition, we behold in them the starting and converging point of all healthy, as of all diseased life, in the various viscera, limbs, and covering of the body.

On these grounds I propose to speak, in the first place, of the *chronic diseases of the upper organs of digestion.* In the preceding chapters, the extension of disease thence to other parts is dwelt upon and explained. The arrangement of this part will proceed partly on the facts of that extension, and partly on the physiological processes of nutrition; and doing this, I shall speak, in the next place, of the maladies attached to the heart and lungs, those being the organs which come next in the great process of nutrition, and towards which the extension of digestive disorder is first and most frequently made. After these will come the *chronic diseases of the chest;* then those of the *nervous system;* afterwards, the extension to the limbs, as shown in *gout*, *rheumatism*, and *simple inflammation of the joints;* next, those of *the lower organs of digestion*, *the colon and rectum;* and finally, the extension to the outer mucous membrane of the body, as shown in *skin diseases.*

I have no intention, however, of entering upon all the diseases incidental to the organs above enumerated, but only such as have fallen under my observation, and been treated by the appliances of the water cure. But as each disease comes to be treated of, I shall first give a history and explanation of its symptoms, so as to render the application of the remedial means, subsequently detailed, intelligible to all readers. One great object, in my view, is to afford such readers a truthful and rational exposition of the chronic maladies that are most commonly met with in civilized society, and, by that means, to enlighten them as to the mode of preventing as well as curing them, by natural rather than medicinal means, though not as to the mode of being their own physician. This, I apprehend, will be done by exhibiting the origin, tracing the progress, and giving an explanation of the phenomena of each disease under notice; to which will be appended one or two cases in point, as practical examples of the previous general history and exposition. This will form the subject matter of the present part. The third and last part will come in aid of it, in the aim of prevention as well as cure, not by mere enumeration of the processes of the water treatment, but by showing how the employment of them at an early period, eradicates the predominant mischief speedily, and, what is of more consequence, tends to the generation of habits and tastes that are altogether alien to the recurrence of the causes which originally produced the disease. For the water cure differs from other modes of treatment, by its much greater stringency regarding the withdrawal of causes, and by its strict reduction of habits of life to the simple natural standard, which both leaves the system free to relieve itself from the disease that weighs upon it, and rids it of the slavery of artificial excitants under which it groaned.

The first diseases of the primary nutritive organs which come to be mentioned are—

§ 1. MUCOUS AND NERVOUS INDIGESTION.

Under the generic name of *Dyspepsia*, these two forms of indigestion are very commonly spoken of and practically treated. Yet there are well-marked pathological distinctions between them: they demand different treatment, and they lead to different results. This I shall be able to show; but I would desire, first of all, to dissipate some vulgar errors that obtain regarding this wide-spread plague of civilization—dyspepsia.

A man with CULLEN's definition of indigestion in his head—"loss of appetite, nausea, acidity, flatulence," &c. —is firmly convinced that he has to treat every one of these symptoms; and he does so treat them, giving a separate remedy for each—bitters for the appetite, effervescing draughts for the nausea, soda for the acidity, ginger for the wind, and so forth. In his mind, the aggregate of these symptoms makes an entity which he calls dyspepsia —a sort of being which he is to annihilate with varied weapons. This is one error: it is held by many medical men, and cherished by very many patients, who admire the complex medication to which it leads.

As a kind of pendant to this, is the error of fixing on one symptom, and calling it the cause of the disease—the old error of short coming knowledge, of taking the effect for the cause. One says the flatulence causes his disease, another the nausea, a third the acidity, and so forth. This leads to the lay treatment with all manner of alcoholic, peppery, and cordial stimulants, alkalis, magnesia, &c.

In some forms of dyspepsia there is loss of appetite and loss of alacrity of limb. The one is attributed to "want of tone" in the stomach, which is true as regards the capillary blood-vessels, as I have shown, but erroneous in the sense in which it is said—namely, as denoting a necessity for tonic stimulation. The other is attributed to debility, and upon this error is built the necessity for high feeding.

In another form of dyspepsia the appetite is excessive—far exceeds the digestion. Yet this, too, is looked upon as a reason for hecatombs of food; and, as the limbs become less powerful under this diet, the erroneous conclusion is arrived at, that enough has not been eaten!

Lastly, there is the error of mistaking fat for flesh, and volume for vigour. A fat, red-faced dyspeptic, suffering torments which his face belies, but with which that face is, as I shall show, closely connected, is generally much pitied by friends when the redness and bulk diminish, though it is often accompanied by diminution of suffering; so that just when Nature is curing his malady, she is marred by the recommendation of anxious people to "take something to get up his looks again"—that something "getting up" the old irritation also.

These erroneous notions are sad drawbacks to the successful treatment of indigestion. The prejudices which they represent, if opposed by the medical attendant, are too strong not to throw disorder into the nervous system. The patient fidgets about the "acidity" or the "flatulence," because his old remedies for them are withdrawn; and this fidgeting induces nervous unsettlement and increased stomachal sensitiveness. And if not opposed, or if seconded by the attendant, the same result comes more speedily and more intensely. The only remedy for this state of things is to describe to the patient, as clearly as may be, the *essential nature* of his disease: to show him how these various symptoms, which he mistakes for causes, spring from that essential nature; and thus to draw the ground from under his prejudices, and prepare him for rational instead of empirical treatment. Let us proceed to do this.

Reverting to the first part of this work, it will be found that acute disease always precedes chronic disease (page 1); and that the great characteristic of acute disease in a part is an excess and congestion of blood (page 7); that chronic disease is an extension *in degree* of the acute (page 15); and that in both, but in different degrees, there is a loss of organic sympathy between the blood-vessels and their contained blood, leading to an imperfect vital chemistry, and consequent bad nutrition and secretion (page 16).

Now, what is called *chronic dyspepsia* means, when reduced to its essence, a chronic excess and congestion of blood in the nutritive blood-vessels of the mucous membrane of the stomach, or of the ganglionic nerves that surround and supply the stomach. The effect of this congestion is to interfere with the quality of the blood, and its organic sympathy with the vessels which contain it. As all secretions are derived from the blood, we might expect that they would not be of a proper kind when proceeding from blood so circumstanced. Accordingly, instead of the ordinary insipid mucus, there is at one time acid mucus poured out, forming the *acidity* so much talked about by dyspeptics, and which, as the membrane which secretes the spittle is a continuation of that which lines the stomach, is also experienced in the mouth. At another time, the power of the ganglionic nerves over the vessels of the gastric mucous membrane is so irregularly exercised, that, instead of mucus, the elements of mucus, in the shape of gases, are poured out from the blood, and the much-dreaded *flatulence* is produced.

Now, suppose a quantity of this acid, or volumes of this air secreted in a stomach lined with mucous membrane, on the outer side of which is a thin layer of muscular, moving fibres, whose office, in health, it is to contract and move the food about in the stomach. The acid and the air, being unnatural matters, bring these muscular fibres into an unnatural state of contraction, and *spasmodic contraction* of them takes place; according to the degree and exact locality of which is the sensation produced. If the middle part of the stomach is the seat of spasmodic contraction (as usually happens in *acidity*) there is a sense of *dragging* or *gnawing* at the pit of the stomach, or a *pain in the breastbone* above the pit of the stomach. If the great sac or left end of the stomach contracts morbidly, it drags upon the passage from the stomach to the throat, and the sensation called *heartburn* is experienced—a mixed sense of acute pain at the pit of the stomach, and drawing in the throat, and occurring mostly when wind is present. Sometimes these pains are sufficiently acute to be felt completely through to the back, between the shoulder-blades.

The spasmodic contraction of the stomach thus produced has various degrees. One of these causes the sensation of *hunger*. Natural hunger is nothing more than a greater than usual contractile movement of the empty stomach, a sort of slight cramp, which is relieved when the hollow muscle, the stomach, has something to contract upon. For this purpose anything will do, from water to pebble stones. In confirmation of this view of the physiology of hunger, it is found that pressure on the pit of the stomach, with the hand or a bandage, suspends the sensation by allaying the crampish movement, just as pressure on the calf of the leg subdues the cramp there. Also, it is known that smoking tobacco or swallowing opiates, or any other antispasmodic remedies, suspends hunger. Instinct, too, leads many hybernating animals to swallow rosin and other indigestible matters previous to entering on their long torpor, which might otherwise be disturbed by the spasmodic craving of an empty, hungry stomach. Well, then, we have a dyspeptic, irritable stomach, containing a mass of undigested food, or a quantity of acrid, irritating mucus, or a large volume of wind, or all three together; any one of these may suffice to violently irritate the muscular coat of the stomach, and produce the amount of spasmodic contraction which corresponds to the sensation of hunger. Hence it is that dyspeptics so often have craving for food immediately after a large meal of it, and at the time when it remains untouched by the digestive office of the stomach. Hence it is that immense appetite is so often a symptom of the most intense dyspepsia. But reference must be ever had to the antecedent cause of the acid or wind, and the spasm they induce; and that cause is inflammatory congestion of the mucous membrane, or of the nerves of the stomach. The want of this is the foundation of all the gross errors that distinguish the ordinary treatment of indigestion. A stimulating anti-spasmodic gives the whole stomach the temporary power of getting rid of wind, or a dose of soda neutralizes the acid, which then ceases to irritate, and the *gnawing*, *dragging*, or *hunger*, disappears. Not so the cause of them, which these remedies have rather exasperated; as is shown in the fact that the doses have to be repeated more and more frequently, until soda is taken in every beverage, and sal volatile, ginger tea, or pepper lozenges, at every hour of the day.

Another and greater degree of spasmodic contraction of the stomach causes the sensation of *nausea;* and this degree calling the surrounding muscles of the belly and chest by sympathy into a similar state, the act of *vomiting* is produced. But between that and nausea there is the partial contraction, which suffices to throw some food, sometimes insipid, sometimes acrid, back into the mouth, constituting the *eructations* that form one of the great distresses of dyspeptics. *Hiccup* is when the spasm is about the upper orifice of the stomach, where the gullet expands into that organ; it then involves the midriff, and that powerful muscle aids in the violent convulsion that marks the act.

Lastly, there is the actual *spasm of the stomach*, where every muscular fibre of it is in the most intense state of contraction, precluding the exit of anything whatever, solid, liquid, or aeriform, from its cavity, and inducing the most alarming sympathies in the organs of the chest, and in the brain. It is most apt to occur in gouty persons; but others are liable to it.

But sometimes the congestion of the nerves of the stomach is so great as to oppress their function, to prevent them from sending to the muscular coat of the stomach the due contractile energy. In this case there is *loss of appetite*. Between this state of the nerves and that which causes craving, there is the same difference as between the condition of the brain which causes delirium, and that which is accompanied by stupor; in the former there is an excess of blood, enough to produce excess of brain function; in the latter there is a greater excess, enough to oppress the brain.

Thirst is an occasional symptom of indigestion. When the irritation of the stomach is greater than usual, it acts as a stimulant to the blood-vessels of the membrane which lines the throat, causes them to contract, and thus diminishes the secretion of that membrane, which becomes dry. That such is the fact is shown by another fact—namely, that washing the mouth, or gargling the throat with cold water, will relieve thirst. It is a more *continued* symptom of mucous than of nervous dyspepsia; but when it occurs in the latter, it is much more intense and pressing for a time.

With the deranged ganglionic power, deranged secretion takes place, as we have seen, in the stomach itself. But the same holds with regard to the membrane which lines the fauces, the mouth, the tongue, and the eyelids: for it is a continuation of the same which lines the stomach. Accordingly, we find in dyspepsia, either *deficient or diseased spittle*, very frequently thick and tenacious, less frequently thin and acrid—the former in mucous, the latter in nervous indigestion. The spittle also tastes acid, bitter, metallic, sweet, mawkish, &c.; which, no doubt, is owing in part to the disordered sensation of the nerves of taste, and partly to the morbid secretion. Further, the vapour from the membrane of the throat and jaws is more or less fœtid, causing a tainted breath; though this symptom is often wanting. For a like reason, namely, the congestion of the membrane in question, dyspeptics are much liable to sore throat, both relaxed and inflammatory, from variations of weather.

Following the membrane from the throat forwards, it covers the tongue—the well-used indicator for the doctor. To go into details on this point would be tiresome, and I shall content myself and the reader too, probably, by stating the general result of my experience of the tongue as a symptom in chronic indigestion:

1. When the tongue is not much, or not at all increased in redness or volume, but has a thickish whity-brown fur upon it, without any great amount of dryness, we may infer that the stomach irritation is of the mucous membrane, and not of an intense nor ancient character.
2. When the fur in question is slimy, and the tip and sides of the tongue that are uncovered by it present a vivid redness, the dyspepsia is of the mucous kind, is intense of character, and is of longer duration.
3. If, with this last appearance, the fur be yellowish, though more dry, the liver and duodenum are involved in the dyspeptic disorder.
4. When the tongue is clean, but vividly red, with the papillæ at the tip elevated, and of the ordinary moisture, a recent nervous dyspepsia may be predicated.
5. When this red tongue is dry and glazed, a more intense degree of the dyspepsia exists.
6. When the very red tongue has a slight degree of whitish fur, and is enlarged in volume, it bespeaks a very intense nervous dyspepsia, sufficient to involve the brain, which, in such case, is congested.*
7. The most intense degree of nervous dyspepsia, however, shows a considerably enlarged tongue, the face of which is split into furrows in all directions, so deep some-

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* This enlargement of the tongue is so strictly connected with stomach irritation, that the tongue will sometimes swell after each meal, and decrease when digestion is over; in coincidence with the excitement or rest of the digestive organs. Moreover, a process of the water cure will cause a contraction of the tongue for the time, by decreasing the stomach irritation. A medical gentleman now under my care has remarked both these facts and reported them to me.

times as to give the appearance of several small tongues just holding together by their edges.

8. When nervous and mucous irritation are both intense, and have endured for a long time, the tongue is red at the tip and sides, covered in the centre with a very thin, white, shining mucous coat, and is enlarged. This *silvery* tongue (literally, not figuratively) denotes a great amount of long-standing dyspeptic irritation to be eradicated. It is a common tongue with hypochondriacs, especially such as have undergone courses of mercury, and is always connected with morbid action of the brain.

Other peculiarities of the tongue are its *indentation* at the sides, which implies its *augmented volume*, and pressure against the teeth; and its *tremulousness* on protrusion, which usually indicates nervous dyspepsia, that has involved the spinal cord. But of the signs above-mentioned, one of the most important is the increased size of the tongue, which so often goes unnoticed. Yet have I seen cases of the most distressing indigestion, where the thickening of the tongue was the only sign it afforded, being in colour, moisture, and cleanness perfect; and what is more curious, in these cases the dyspepsia diminished with the diminution of the tongue, which, however, became *furred* and rather clammy, seeming to show that this latter kind of tongue is that of a *minor* degree of stomach irritation. It is too much the custom to look for fur of the tongue as the only sign of chronic diseased digestion; whereas it is the accompaniment of the least tedious and intractable forms of it; your silvery, or your clean, red, swollen tongue, is far more difficult to manage than the ordinary foul "wash-leather" tongue.

The *gums and teeth* afford signs of dyspepsia; the same mucous membrane which covers the tongue, and lines the stomach, passing over the gums, dipping down the sides of the teeth, and sending a pulpy prolongation by the root of each tooth into its centre. This arrangement renders it sufficiently easy to explain the *redness*, *swelling*, *tenderness*, *sponginess*, *bleeding*, *and fœtor of the gums;* symptoms which attend, in great or small array, most forms of indigestion, especially of the mucous character. In nervous dyspepsia, the gums often lose their nutrition, and shrink from the teeth, leaving their roots bare. Neither is it difficult to comprehend how, with such a prolongation of the mucous membrane, *aching*, *decay*, and *discoloration of the teeth* occur in dyspepsia. Besides this, the nerve which passes directly from the brain to the stomach, sends branches, as it goes down the throat, to the jaws, which branches give out a twig of nerve to each tooth. It is easy to see how a draught of water, diluting some acid liquid, or allaying some exasperated inflammatory action in the stomach, may almost immediately soothe "a raging tooth," in which no trace of decay could be found to account for the pain. Many a noble grinder has been extracted, when the more pleasant operation of swallowing some iced water would have allowed it to remain in the jaw, and do good service for years to come.

At the point where the inner mucous membrane ceases, and the outer mucous membrane, or skin, commences—at the lips—there is, frequently, accumulation of blood in the spongy tissue which constitutes them. This *fiery red, spongy lip*, occurs in recent mucous disease, or in nervous dyspepsia at any stage; it goes with the red and spongy gums. Sometimes its covering membrane partakes of the nature of skin, and throws off mucus, which coagulates in the air, and forms dry flakes on the lips. But when dyspepsia has been of very long standing, and has invaded the structure of the duodenum, or liver, we have the lips at first marbled red and white, and, as the disease advances, the white predominates, the lips, the lower one especially, becoming blanched, waxy, and hard. This is the old drunkard's lip, and bespeaks irremediable mischief.

Proceeding from the back of the throat to the nostrils, and thence, by the passage for the tears to the eyes, the mucous membrane lines the eyelids, and covers the eyeballs to the extent of the portion called "the white of the eye." Hence the *bleared*, *suffused*, *eyes* of many dyspeptics; the *gorged*, *thickened*, and internally *red*, and externally *dark eyelids;* the inflamed glands at the roots of the eyelashes, accompanied by deficient, or *thick gummy* secretion there. And as these two surfaces—the inner eyelid, and white of the eye—work upon each other, the result of their congested state is painful action, producing flow of tears, the whole going by the name of "*weak eyes*," a symptom of very common occurrence in chronic indigestion.

Itching of the nostrils, dryness, or, on the other hand, *excessive distillation* from them, *irregular sense of smell,* all which take place in dyspepsia, are accounted for by the extension of the gastric mucous membrane to the nostrils. When the membrane is gorged and thickened, the nerves of smell spread over it are oppressed in their function, and *deficient sense of smell* is a dyspeptic symptom. The same connection of membrane renders dyspeptics very liable to take cold in the head—that is, to have the lining of the nostrils gorged with blood, as the secondary consequence of external cold.

Running up from the back of the throat to the *Eustachian tube*, which is the avenue thence to the inner ear, the mucous membrane here, also, is liable to variations with that of the stomach. It may become *dry*, and then there is *burning* pain and *acute sense of hearing;* or it may become gorged with blood, swelled, and, stopping up the passage, produce one species of *deafness.* Irregularity of hearing is a symptom very often complained of by dyspeptic patients.

Finally, the gastric mucous membrane passes over the spongy bones at the back of the nostrils, and reaches and lines the hollow space which separates the two plates of the bones of the forehead—*the frontal sinus.* This is the seat of *sick headache*, and of *bilious headache*, as irritation of the membrane of the stomach itself, or of its extension to the liver prevails.

So far, it will be perceived, the symptoms of dyspepsia are explicable by the continuation of the inner surface of the stomach. But, in thus tracing them by continuity of membrane, it should never for an instant be forgotten that the sympathies, healthy as well as morbid, between the different portions of that membrane, are due to the similar nutrition of them all under the direction of the ganglionic nervous system. It is the nerves of this system which should be ever present to the mental eye of the practitioner when he beholds, in the various signs I have detailed, evidences of chronic dyspeptic disorder. Failing in this, he falls into the worst errors of ontology, treating names instead of states of action, and putting aside as non-existent the organic sensitiveness of the most sensitive membrane of the body—the mucous membrane of the digestive organs. We know not of such membrane without myriads of nerves of organic life entering into its intimate texture, and regulating all its vital actions. Not a tear distils from the eye, nor a drop of the wonderful gastric juice from the lining of the stomach, save at the urgency of the ganglionic nerves which supply the membrane of either organ.

Whilst morbid phenomena are proceeding in the extended membrane of the dyspeptic stomach, other symptoms, having no dependence on such extension, are pressing. Such are the signs that are exhibited by the brain and spinal cord, and are called the *nervous, or the brain symptoms* of chronic indigestion. It were vain to attempt the enumeration of all these signs, including, as they do, every possible variety of sensation and diseased thought; and there is scarcely one, however extravagant, which some dyspeptic or other has not experienced. *Pains*, shooting, burning, cutting, drawing, lacerating, &c.; *sensations* of cold, heat, fulness, emptiness, creeping, itching, gusts of wind, opening and shutting, gnawing, roughness, trembling, &c.; *thoughts*, depressed, impatient, suspicions, selfish; the mind indolent, vivid to the last degree, perverted, or, on the other hand, with excess of natural tendencies; the volition powerless, or, again, great to the point of constant restlessness. Such are a few of the phenomena which show that the irritation of the digestive organs has disordered the nutrition of the cerebral organs. But how diverse soever they may be, they are all reducible, in their point of origin, to three positions—viz., the spinal cord, the grey matter of the brain, and the white matter of the brain.

As the spinal cord is the seat of the exercise of the will, all the dyspeptic signs involving that mental function are referable to morbid circulation and nutrition there. Irritations proceeding from the stomach to the cord alter its healthy action; the nerves which it sends out to the muscles of the body cease to receive steady energy from it; and thus, both in their sensations and in their power of setting the muscles into action, they are disordered. Hence the *trembling* of the various parts which the will cannot command;* the *spasmodic and convulsive move-*

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* That trembling depends on diminished power in the seat of the will, and cannot be resisted, these admonitory lines of Horace to Quintius would imply:

> "Neu, si te populus sanum recteque valentem,
> Dictitet, occultam febrem sub tempus edendi
> *Dissimules, donec manibus tremor incidat unctis.*"
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> Lib. i., Epistol. 16.

ments of a limb, or part of a limb; the occasional and *temporary palsy and numbness* of a limb, denoting irritation to the amount of pressure on the cord: and hence, too, the *cramps, shooting, and other pains, cold and hot feelings*, &c. And all of these may be confined to a small part of the trunk or of the limbs, to a single joint, for instance, because only a small part of the spinal cord, where nerves are given out which go to the joint, is involved in the irritative sympathy originally proceeding from the dyspeptic stomach. The long list of *hysterical* symptoms, so often attendant on chronic indigestion, is more especially traceable to this morbid sympathy between the stomach and spinal cord; the startings, shudderings, uncontrollable laughter or weeping, being indications of the lost controlling power of the spinal nerves. A like sympathy between the stomach and spinal cord is the means of inducing the malady called *asthma*, and other forms of difficult breathing; as also *stomach cough*, of the latter of which I shall treat more fully under the head of disorders of the respiratory organs. Meanwhile, as regards the signs dependent on the sympathetic irritation of the spine, it may be remarked how little is this sympathy recognized! and how often are the spines of dyspeptics blistered, leeched, stretched, laid for months or years on inclined planes, &c., under the plea of *spinal complaint*, when a little more observation and physiological deduction would have spared the spine, and discovered a stomach at the bottom of all the mischief!

It should be mentioned, that these disordered spinal phenomena are most commonly connected with *nervous* dyspepsia.

The *grey* matter of the brain is the outer layer of that organ, and the physical agent of the mind. In nervous indigestion morbid sympathy is propagated to it, and morbid nutrition induced in it, and the mind thus has an unfit organ to work withal. The consequence is a series of mental feeblenesses and contradictions, that form a large portion of the misery of the dyspeptic. The impatience, irascibility, caprice, anxiety about trifles and about self, suspicions, groundless fears, and similar marks of morbidly vivid mental action, are things for which the patient deserves pity, scarcely blame, for he knows their existence, and feels the torment of their mastery over him. That dominion may increase until *moral or intellectual insanity* is established—a result not unfrequent, when, misled by the clean tongue of nervous dyspepsia, to which insanity of this kind belongs, the practitioner has only *debility* in his head, and prescribes stimulation as a remedy. Such cases people the lunatic asylums.

But when the *white* matter of the brain is principally affected by morbid sympathy with the stomach, we have, for the most part, mental phenomena indicating *oppression* of the mind's physical requisite. There is slowness of perception, thought, and action; everything is troublesome, or impossible; attention flags; reading and talking are alike irksome; reverie takes possession of the patient, and somnolence often steals on him. Besides these mental symptoms, there is more or less giddiness, confusion, sense of weakness of the brain, expanding sensation of the skull, numbness of the scalp, intense aching, or simply malaise of the whole head. The external senses also suffer; humming, and other noises, pervade the *ear*, and deafness invades it; the *vision* is disturbed by black spots, dark crape, steaming vapours, sparks and flashes of red; the *taste* is obliterated, or is pervaded by acid, saline, mawkish, putrid, or metallic savours; and the *smell*, though the least liable to distortion, is sometimes crossed by disagreeable, and occasionally, agreeable effluvia, which do not exist in the atmosphere. These perversions of the external senses are rather referable to the disorder of the spinal cord, whence the nerves of those senses arise, than to the brain itself. But besides that they arise from the cord *within* the skull, the congested state of the brain suffices to explain the deterioration both of the sensual and mental operations. For when, in consequence of long-continued irritation from the stomach, the brain becomes the recipient and the retainer of an undue quantity of blood, its distended blood-vessels press upon all the nervous matter contained within the skull; white, grey, and spinal, and, in this matter, interfere with the activity of each and all. Pressing upwards, and laterally, the distention affects the *grey* matter, the physical organ of the mind's activity; hence the slowness of perception and thought. Pressing on the mass of white matter itself, and downwards, upon the upper portion of the spinal cord, whence the nerves of the senses originate, the deficient volition, the irresolution, and the perverted or deficient external senses, are readily accounted for. And such pressure may go on to apoplectic suspension of all the faculties, sensific, perceptive, thinking, and moving, or tell only on some one, causing deficient memory on particular subjects, palsy of some particular limb or set of muscles, or annihilation of some sense, as of vision in *amaurosis.*

Fulness of the white portion of the brain may be either of a character to induce *apoplectic seizure*, or gradually sap the integrity of the functions, and cause slowly-coming imbecility and *palsy.* The different conditions of circulation in the head, leading to such terminations, will be stated when speaking of these two maladies. Meantime, it should be mentioned that mucous indigestion is the most common originator of the fulness in question.

In speaking of these nervous phenomena of chronic indigestion, and of their production from disordered circulation of blood in the great centres of the animal nervous system, we are never to forget that such circulation is carried on under the control of the ganglionic nervous matter distributed in those centres. The brain, in fact, may be regarded as one large ganglion. The most minute change in the sensific, motific, or mental acts is accompanied by a corresponding change in the circulation, and therefore in the ganglionic influence. Looking back to the starting point of the whole of the symptoms, the digestive organs, the great centre of the influence alluded to, we cannot fail to remark the importance of keeping in view the physiological fact to which I have called attention. It has the strongest bearing on the treatment, since, in the regulation of the mental and bodily exercise, we are reminded of the mode of connection between the brain, which is to perform it, and the stomach, which is to keenly feel what goes on in the brain. Moreover, this feeling is an *organic* one; it is one dependent on the organic, the ganglionic community of nerves between the two points, the stomach and brain; it is one which may exist to the degree of the most intense disease, without eliciting any *animal* feeling whatever, and which, therefore, is only explicable on the ground of the ganglionic connection. Ulceration of the stomach may exist without an *animal* sensation; and not a pain, ache, or any other feeling, may precede an apoplectic seizure.

The symptoms of chronic indigestion which refer to the *skin*, are those denoting irregular and deficient circulation in it. The *sensations* of the outer surface show this in the great susceptibility to cold, the incapability of reacting against the elements. Dyspeptics are always more or less "coddles," and that instinctively, for let a breath of 40° of Fahrenheit blow on the skin, the little blood that is in it leaves it, and the internal organs, already congested, receive it without the power of returning it; and the consequence is, increased irritation of the spinal cord, and shivering and a feeling of misery transmitted from the skin to the same point, and to the brain. In this manner it is that cold so often begets intense headaches in dyspeptics, and occasionally even apoplectic pressure on the brain: winter is well known to be the season for frequent apoplexies. *Creeping sensations*, and those of *pricking*, are referable to the same irregular circulation in the spinal cord and the skin, and in both it is induced by the temporary increase of irritation of the digestive organs. *Flushes of heat and of redness* acknowledge the same cause; the power of controlling the equilibrium of the circulation is partially lost by the disorder at the ganglionic centre, the stomach, and the blood is urged hither and thither, according to the phase of irritation existing within. Most commonly, however, these flushes are in the face and head, those parts receiving more blood in health, and sympathizing more directly in disease, than other parts, with the digestive apparatus. Stagnation of blood in spots also takes place, and *pimples* then appear, chiefly in the face also, and for the reason given in the last sentence. Symptoms of this kind are most common in nervous dyspepsia.

Yet these irregular distributions of blood on the surface are rude but laudable efforts of the internal organs to throw their disorder on the less important organ—the skin; and as long as they continue, the patient may be said to have an amount of *vis vitæ* in him sufficient to act upon in treatment. In such cases, there always remains sufficient blood in the skin to invest it with some of the colour, softness, and elasticity appertaining to life; it looks like the covering of a living frame. But in many cases of chronic dyspepsia, the internal mischief has existed so long, or has been of such a destructive character, that the skin has lost all its vitality, and is like, in appearance as well as in activity, a surface of parchment. It does not feel or look as if it were alive; its reactive agency is suspended, and except for cold, it has but little sensation: there is very deficient circulation in it. At other times, the skin, though dirty-looking, and without a shade of healthy hue, is nevertheless possessed of the elastic *feel* of life. This state is often present as the result of purging with vegetable aperients, colocynth, aloes, &c., and implies a vitiation, a deterioration of the blood, that deprives it of its healthy scarlet hue, and endues it with the unnatural shade which the skin partakes, which is not so much deficient in blood, as supplied with bad blood. A corroboration of this I have seen in many instances, where, in female patients, as the skin became more clear and ruddy, the periodical illness, which had been in the outset, of a dark unhealthy colour, passed into the vermilion, which speaks for a more wholesome condition of the blood. This state of skin, therefore, is more to be relied upon than the dead condition last described, which is more ordinarily the result of great abuse of the nervous system in excesses of the passions, and of preparations of mercury and iodine. For the rest, the *irregular* distribution of blood to the skin, as shown in heats, flushes, pimples, eruptions, &c., is more frequent in the nervous form of dyspepsia; the *deficiency* of blood on the surface as shown in the inactive, parchment skin, is more frequent in long-continued mucous indigestion; and as the muddy, yet lively skin, indicative of vitiated blood, is a sort of passage towards the dead skin, so is it to be found in certain phases of the nervous, as well as the mucous dyspepsia.

In this exposition of the symptoms whose aggregation constitutes indigestion, I have confined myself to such as may arise from disorder of the stomach and its nerves alone. Others there are which, though very often seen accompanying the above, are by no means *essentials* of dyspepsia; I allude to disordered secretions of the liver, kidneys, and bowels, as also of the genital organs. Of these I shall have occasion to speak hereafter. But even of those which I have enumerated, let it be understood that only a portion can be present in the same individual, according to constitutional predispositions, and the phase of stomach irritation that obtains. In some, the dyspepsia originates head symptoms, in consequence of the large and active development of the nervous system; in others, of scrofulous habit and contracted chest, the stomach is the author of chronic inflammation of the air-tubes, cough of various kinds, &c.; whilst in others, again, skin disease is the chief evidence of stomach disease. The same applies to the symptoms in the organ itself; they may be few or many, so far as the sensation is concerned, according to the organic connection between it and the brain. But in diseased sensations, secretions, and movements, there is always a sufficient number of symptoms to determine the existence of indigestion, mucous or nervous.

Which of these kinds of disorder it is, may be in great measure ascertained by reference to the above detail of signs, where I have marked the head under which each symptom comes. But it may be profitable to place the distinction in a more concentrated form under the eye of the reader; the rather, as it has an important bearing on the treatment of each.

Around, and especially underneath the stomach, there is a thickly-meshed network of nerves of organic life (*see frontispiece engraving*), from which, after infinite subdivisions, myriads of twigs proceed into the substance of the stomach, and endue its inner or mucous membrane with *organic* sensibility and secretorial power. Intertwined with this network are nerves from the spinal cord and brain, whose office is supposed to be the conveyance of sympathy and *animal* sensation to and from those organs and the stomach; the quantity of these nerves of communication varies in individuals. Now, by *nervous* indigestion I mean those symptoms which indicate irritation of the nervous network about the stomach; and by *mucous* indigestion, those which point at the lining membrane of the stomach as the seat of the mischief. Such a distinction unquestionably exists, and influences the treatment and the result; but, as may be readily conceived, where in one case the roots of the nerves, in the other the extremities, are points of disorder, one ofttimes runs into the other, and each at all times more or less affects the other, the nervous irritation occasionally disordering the mucous surface, and the latter, when exasperated, involving the whole plexus of nerves, and, by the junction, exciting a most formidable species of dyspepsia. Such is the organic distinction; the functional one will be best expressed in the following parallel table:—

NERVOUS DYSPEPSIA,	MUCOUS DYSPEPSIA,
Occurs in persons of vivid nervous system; large heads and active habits; in women and youth.	Occurs in persons of slow animal sensations, medium heads, steady minds; in middle age.

NERVOUS DYSPEPSIA.	MUCOUS DYSPEPSIA.
The result of mental shocks, tense condition of thought, excesses of the passions, mercury, iodine, opium, bitter tonics, sal volatile, &c. Also follows on nervous fevers treated badly, and on blood-letting.	The result of sedentary habits, study, excesses of diet, especially eating, saline purgatives, arsenic, and other mineral tonics.
In its course is accompanied with more animal pain, spasms, eructations, flatulence, sinking, gnawing, great and frequent but often capricious appetite, distress after eating, slight thirst, bowels irregular, fæces sometimes coloured, sometimes otherwise.	In its course begets scarcely any animal sensations, is accompanied by little flatulence, much rising of food, deficient appetite, great thirst, bowels torpid, evacuations white.
The tongue is generally red, clean, and swollen, or covered with a white, silvery mucus, the lips and gums red and swollen, eyelids red, skin flushed in places, subject to eruptions and pimples, flesh emaciated and *wiry*.	Tongue flabby, covered with coloured fur, red edges and points appearing at the sides and centre of it, lips marbled or like yellowish wax, eyelids the same, skin like parchment, body turgid with unhealthy fat.
Restlessness of mind and body impatience, irascibility, pain, and giddiness, and weakness of head. Produces atonic congestion of head and gradual palsy. Causes palpitation of the heart, stomach cough, and even tubercular deposit in lungs. The liver only irregularly and for a time involved. Pulse generally quick and sharp.	Tendency to somnolency and inactivity of body, irresolution and depression of spirits; dull pain with confusion of head. Produces apoplectic seizure and sudden palsy. Excites but little morbid sympathies in the chest, but is generally allied with considerable disorder of the liver. Pulse generally dull, hard, and comparatively slow.

These will suffice to mark the pathological differences between the two states of dyspepsia; although there are other more minute signs which make the line of demarcation still more pronounced. They are important, inasmuch as they indicate, on the side of *nervous dyspepsia*, *excessive irregular* functions with mal-distribution of blood; whilst, on the part of *mucous dyspepsia*, the phenomena point to *oppressed* function with stagnation and congestion of blood in important organs; considerations which must necessarily have much influence on the treatment.

§ 2. TREATMENT OF INDIGESTION.

In speaking of this, we have to refer, as might be expected, to the nervous or mucous character of the disease. Not that I would have those *epithets* treated, which mean nothing save as they are representatives of *states of vitality these* are what we have to deal with. Accordingly, if with mucous disorder there be some of the signs of nervous irritation, such as the sharp pulse and clean red tongue, as sometimes happens, this evidence of the irritation in question is to be met by appropriate measures, notwithstanding the prevailing character of the disorder. Such a complication, though not unfrequent, is generally temporary, and is traceable for the most part to some passing mental agitation. So also the addition of mucous is often, indeed more frequently, made to nervous irritation, and by repetition at length involves the lining membrane of the stomach in permanent disorder. In such case there is a *third* state of digestive derangement to treat.

The TREATMENT OF NERVOUS INDIGESTION has in view the reduction of a purely nervous irritation of a chronic inflammation of the nerves of the stomach. These last are exquisitely sensitive, and as all excitements applied to any part of the body are re-echoed, as it were, at this centre of nutrition, it behoves to be very careful as to the means applied. As regards the stomach itself, therefore, the remedies should be chiefly *negative*—the withdrawal of irritating food and beverage. And this kind of indigestion is more exasperated by *bulk* of food than by the highly nutritious character of it ; hence the moderate use of animal diet is more agreeable to the stomach than the larger quantity of vegetable food that would be required for the good appetite which usually attends this form of the disease. A smaller bulk of animal food suffices for nutriment, and does not distress the stomach so much ; besides which, the irregular and deficient ganglionic nervous power causes a bad analysis of the vegetable diet, which, instead of being converted into healthy chyme, has its gaseous elements let loose ; and these aid much, but do not stand alone, in producing the flatulent distension so distressingly prominent as a symptom. But it must not be supposed that concentrated animal diet is hereby laid down as the invariable rule of diet. Of all the forms of indigestion, the *nervous* requires the most accurate adaptation of diet to the Protean changes of the functions—changes which no writing would convey to the reader. In these remarks I only pretend to give the leading indications of dietetic management; professional experience alone can detect the causes for its daily or weekly alteration.

For a similar reason with that above given—namely, the irritable and feeble state of the organic nerves of the stomach, liquids of a high temperature are very prejudicial in nervous dyspepsia: although, for the purpose of quieting some symptom, flatulence, spasmodic pain, sinking, or gnawing, recourse is usually had to the hottest tea or other vegetable infusion, sometimes to hot water alone. This destructive practice inveterates the irritability of the stomach, and relaxes its powers to such an extent, that many patients coming to Malvern, are utterly unable to take food without hot water, and the introduction of the smallest quantity of *cold* water brings on acute spasm of the stomach. Hence it will be found that the part of the water treatment which consists in drinking cold water requires in many instances to be withheld for a time, or to be very gradually applied, the patient taking only a wine-glassful at one time: and even this I have been obliged to prescribe at a temperature not lower than 55°. In proportion as the positive remedies produce a sedative effect on the stomach, the quantity of water may be increased, and its temperature decreased.

Those positive measures should have for aim, the reduction of local irritation by local remedies, and the establishment of a counteracting irritative process in some organs distant from the stomach.

The first of these is effected by fomentations with hot water over the pit of the stomach, once or twice a day, from half an hour to an hour and a half, according to the condition of the pulse, a strong one justifying more fomentation than a weak one. The temperature of the water varies with the intensity of the symptoms; the more acute the *painful* ones, spasm, distension, &c., the nearer to the boiling point should the water be. During the fomentation, the stomach will bear cold water more patiently, and, accordingly, it should be then given in frequent sips. In the intervals between the fomentations, a compress should be worn on the stomach, wrung out of warm or cold water, according to circumstances.* Where the animal heat suffices, the compress should be cold, and frequently wrung afresh.

Another aim, the establishment of a counter-acting irritative process in some organ distant from the stomach, is compassed by wet-sheet packing, rubbing with the dripping sheet, long sitz baths, and foot baths; the two former inducing the blood towards the skin, the sitz baths driving it towards the lower organs of digestion from the upper, and the foot baths acting in a more transitory way as derivatives and stimulants to the abdominal congestion. And it should be kept in mind, that the object is to produce a counter-action, resembling as nearly as possible in its character that which it is intended to remove—namely, a nervous irritation. For instance, it is not desired to produce a suppurative congestion of the skin—such as would generate boils—but that amount of cutaneous irritation which is exhibited in a rash or itchy eruption. A good deal of friction is therefore desirable, and thence the use of the dripping sheet is mostly preferable to the shallow bath, the rather, if the patient is much shattered. Nor should it be employed after the packing sheet only, but the skin should be excited by it alone, once or twice a day besides, it being peculiarly grateful in its results to nervous dyspeptics. The long sitz baths, besides drawing blood towards the lower bowels, and creating an irritation there, also excite the nervous irritation of the skin of the loins, the itching of which very often makes the patient forget all his sensations about the stomach. The foot-baths, besides being derivative, afford, by the combined cold and friction, an amount of nervous stimulation to the centre of nutrition, which tends to dissipate the congestion of its nerves: and thus it is that this simple remedy so often brings instant relief to malaise, or pain of stomach or head.

But it is in the employment of the wet sheet packing that the greatest discrimination is required in this nervous malady. Although in the great majority of cases it is necessary, yet does its prolonged use appear to aggravate many of the brain symptoms of the disease, the patient becoming more fidgetty, hypochondriacal, sleepless, and tremulous. It is true, that irritation cannot be subdued without lowering the energy of the brain; but this may be done in a more gradual and less painful way, by moderating the use of the sheet; packing, for instance, only every other day, and using more of the dripping sheet. But should the signs of its trying the frame too much come on, there only remains to desist from it altogether for a few days or a week, to take more frequent foot-baths, and to diminish the amount of exercise. Indeed, as regards all the positive means recommended, the practitioner will find it necessary, from time to time, to vary the application, suspending some and augmenting others, to meet the endless vagaries of a nervously morbid stomach.

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* To prevent repetition, the circumstances requiring a difference in the details of treatment will be stated in the third part, which treats of such details. The rationale of them will also fall into that part.

A very nice part of treatment to adjust is the amount of *exercise.* In the majority of cases, it should be very sparingly used, because in exercise there is an exertion of the seat of the will, the brain, and spinal cord, which are already kept in an irritated state by the digestive disorder, and whose excitement in the act of locomotion is, by the strong sympathy between the parts, prejudicial to the nerves of the stomach; it, in fact, sends new irritation to a set of nerves already oppressed with a morbid amount of it. These cases require all the acumen of the practitioner; for on the question of exercise hinges that of the amount of water treatment, much of the latter demanding more of the former, and *vice versâ.* Nor should he be led away by the locomotive energy of the patient, for that is, for the most part, fictitious, and depends on the unnatural excitement of the brain and spinal cord, urged in their office by the unnatural irritations propagated towards them by the digestive nerves. Patients in this state have, in fact, *impulse,* not *sustained energy.* They talk, walk, and eat rapidly, but each has the effect of thickening the spittle, drying the tongue, and rendering the pulse sharp, hard, and rapid. Neither does exercise increase appetite in them; it rather annihilates it.

The rule to determine the amount and kind of exercise in nervous dyspepsia is to watch the effect of walking on the viscera. If it produces any of the following symptoms, sinking or dragging at the pit of the stomach, nausea, loss of appetite, thirst, dryness of mouth, fœtid breath, hard, edged pulse, and shrunk countenance, it will not advance the disease towards cure, but rather exasperate the nervous congestion at the pit of the stomach; for it cannot be too often repeated, *the digestive organs pay for the rest of the body;* exert what part soever you may, *they* have to find the materials for the exertion. Now, nervous indigestion very rarely bears exertion of the limbs, without some of the above signs of its disagreement; and it is therefore generally advisable to refrain from much walking, and to have recourse to driving, or, if the weather permits, to sitting in the air, for that is always necessary. Above all, the patient should refrain from exertion immediately before a meal, and should remain seated for at least a quarter of an hour previous to eating. Similar reasons forbid the wasting act of talking, as well as the close application of the mind to any one subject, whether it be abstruse or superficial. This, indeed, ranks among the frequent causes of nervous dyspepsia.

Sleep is very uncertain in the disease, and therefore should, in my opinion, be caught whenever it can, in day or night, even after a meal, if the brain tends towards it. The stomach gains thereby so much absence of excitement from the walking brain, which also is recruited. I constantly recommend it to patients, and never found any but agreeable consequences from it. Torment is cheated of the time spent in sleep. But, except in the extreme cases where the brain and spinal cord are seriously compromised, and tremors, giddiness, and faintings prevail, early hours of rising should be observed, nor should breakfast be taken in bed.

The clothing of nervous dyspeptics must vary with the weather, until the internal irritation has been subdued to the extent of allowing of better sleep, fewer morbid sensations at the pit of the stomach, and more exercise. Cold damp is the most intolerable to them; the east wind is, also, their misery; and at periods when either of these is likely to prevail, silk, or some fine woollen texture should be worn next the skin. It must be remembered, that they have a congestion and feebleness of re-action in the internal organs, and that when external cold is applied continuously, as the atmosphere is, blood is driven in upon those organs, they not possessing the organic energy to re-act and drive it outwardly again. Dry friction with hair gloves or rough towels is beneficial, and may be practised either after the baths or at any other time. It is well adapted for the feet, when, after a foot-bath, walking is found to be impracticable.

After these outlines of the treatment of nervous indigestion, I proceed to illustrate both it and the ordinary symptoms of the disease by a case treated by me at Malvern.

CASE I.—NERVOUS INDIGESTION.

"In the spring of 1843, a gentleman came to me complaining of incessant sensations of various kinds in the pit of the stomach, gnawing, sinking, &c., but of no actual pain. Pressure there caused no pain, but almost made him faint. He mistook, as all the world does, these sensations for hunger, and was chewing buscuit all day long, under which diet they flourished and increased. His appetite was good, as any one would have allowed who saw him eat his ordinary meals as he did, with amazing rapidity. But after its gratification came distress, distension of stomach, flushing of the face, restlessness, &c., &c., and continued for two or three hours. He had a clean, red tongue, swollen, and deeply split in all directions, a chronic irritation of the tonsils, gums that were receding from the teeth, and breath hot, but not fœtid. Bowels irregular as to time and quality, but on the whole, rather constipated. The pulse was sharp and rapid. The heart often palpitated. He slept excessively badly, his thoughts being rendered most vivid and painful by the vigils. He had humming in his ears, and occasional slight obscuration of vision. Flying pains, stitches, and cramps in the ribs, between the shoulder-blades, about the hips and in the fingers, teased him, and gave him notions of rheumatism, scarcely believing that with such an appetite he could have dyspepsia! His mind was on the whole irritable, but he had sometimes fits of depression of several hours' duration, in which he made no complaint of sensations in the stomach. He could not apply his mind long to any one subject, but that was more from restlessness than inability. He could walk any distance, but loss of appetite, sinking of the stomach, and shrunken face were the consequences. The feet were constantly cold; and the skin, highly sensitive to cold, often took on the state called 'goose skin.' It had, however, too much colour about the head and face. He had been suffering for more than five years, and notwithstanding his appetite, had become thinner and softer in flesh. He had all the active habits of a mercantile man, and it was the long, unceasing anxieties of his avocation which gradually sapped his digestive powers. Of course he had taken all the aperients, tonics, alteratives, &c., that could be devised.

"What I did to this patient was as follows:—I had him fomented for three quarters of an hour every night with water at about 150°. On rising, he was well rubbed with the cold, dripping sheet, the same at noon, and at five P.M. He drank a small tumbler of water in sips, whilst dressing in the morning; another, in like manner, after the noonday rubbing; again, about two hours after dinner, taken at two P.M.; and one between tea-time and bed-time. He wore a cold wrung compress on the bowels all day, and wrung it afresh after each rubbing. He walked half an hour after each dripping sheet. Cold water, cold toast, and a very little butter for breakfast. About five ounces of well-done meat, and some stale bread, and salt, for dinner; and the same food as at breakfast for half-past six P.M. After four days of this, he was packed in the half-wet sheet every morning, and rubbed with the dripping sheet after it. All the rest as before. In the course of three weeks, he began to feel weaker, *but more quiet in himself.* His sleep had improved, also. He then discontinued the fomentations, and took a sitz bath at 60° for twenty minutes at noon, in place of the dripping sheet. I ordered him more water, especially before breakfast. The bowels had become more constipated than before, and although opening very slightly only every three or four days, no sign of fever appeared. Two weeks of the sitz bath, which had, meantime, been taken twice a day, made impression on the bowels, which gradually became more free, with a previous degree of flatulence that was astounding. In the seventh week, he was considerably relaxed in his locomotive powers, and much preferred rest to movement. But with all this apparent loss of strength, he was actually organically stronger; his pulse was rounder and softer, and he had no sinking at the stomach. He now left off the morning packing, and took only a cold shallow bath then, the two sitz baths, cold, in the course of the day, for thirty minutes each, and two foot-baths of ten minutes each. Under this regime, he began to regain his alacrity in eight or ten days, when he was suddenly seized with giddiness, nausea, and tremblings, which in the course of eighteen hours terminated in a copious diarrhœa. This continued for four days with varied intensity, the appetite remaining good all the time, and the nervous system quiet. This *internal crisis* took away some of the more distressing symptoms—the flushing of the face, the palpitation, the cramps about the hips; and it increased the warmth of the feet. During its continuance, the patient ceased to take the sitz baths, but made no other change in this treatment. During the previous fortnight, also, I had improved his diet by a greater quantity of animal food, and simultaneously with that, had increased the amount of exercise. Every now and then there would appear some sharpness of the pulse and heat of throat, against which I employed a single wet-sheet packing, which never failed to reduce the reviving irritation.

"Circumstances obliged this patient to leave Malvern in the eleventh week of his sojourn. He left it with this gain—better sleep, quieter nerves when awake, spasmodic sensations of stomach and limbs gone, bowels regular, pulse larger, breathing deeper and longer, palpitations gone, flesh firmer and fuller. But he was still far from well, for his stomach was very touchy: under the greatest care of his food, there still remained some feeling of distention and signs of flatulence after it; and then, too, he did not feel so quiet as he had done before the meal. However, I gave him full directions how to proceed, desiring him to pack once a week, take the cold shallow bath for two minutes every morning, a cold sitz bath for half an hour once daily, to wear the stomach compress, and to drink six tumblers of water daily. He continued this plan, as well as a stringent diet I prescribed, for four or five months after quitting Malvern, corresponding with me meanwhile; and at length gained his end in the restoration of a stomach and nerves which were conducting him, with unerring certainty, to the dangers of brain congestion and palsy, or to the horrors of hypochondriasis."

Cases of the above kind are very common in persons of business, and of active and anxious minds—a large class in English society. The usual mode of treatment is to add fuel to the fire at the stomach, in the shape of tonic and alterative medication and stimulating diet. Yet is it not the less true that the patient must be made *apparently* *weaker* in order to be made *absolutely stronger.* That irritation of the stomach nerves which disorders the brain, now causing violent impulsive and fictitious energy, and again tremblings, must be reduced; and this done, the brain loses its old irritant, and returns to what it really is—a very weak disabled brain, sending a very small amount of *sustained* energy to the limbs. This *lowering* part of the process is effected by the fomentations, wet-sheet packing, and diet, which, while they seem to enfeeble the brain, relieve the viscera from oppression, and enable *them* to act more forcibly and healthily. Hence my saying that the patient is "absolutely stronger," though "apparently weaker:" *real strength* is to be found in the healthy viscera alone.

The building up in such a case as the above is a very nice process, so small is the irritant that is capable of arousing the old mischief again. With all the care possible, some of it will return, as the reader observes, in the necessity for occasional wet-sheet packing far on in the treatment. The tonic effects of the water-cure require to be tempered ever and anon by its antiphlogistic parts, when it has to deal with such a malady as a nervous dyspepsia; and this is one reason wherefore so much time is required to overcome it. And it is the great reason wherefore the ordinary medication and diet fail to overcome it at all; their effects are wholly irritating. For the rest, six months is a sufficiently short period to conquer so slippery an antagonist as a morbidly nervous stomach, which has generally endured for more than as many years; and I would caution the reader against recorded cases of the disease cured in five or six weeks. Such cases never have occurred, and never will occur, save in the advertisements and pamphlets of charlatan writers.

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§ 3. TREATMENT OF MUCOUS INDIGESTION.

At an early stage, not long after it has deserved the epithet, "chronic," the disease is best managed by moderate wet-sheet packing—that is, every other morning; the cold shallow bath every morning; sitting baths of half-an-hour twice a day, with friction of the abdomen during the last ten minutes of each; and abundant drinking of water.

But the practitioner of the water-cure must not expect such easy cases. He will find those only seek his aid who have had the simple acute indigestion exasperated by bad treatment, and by continued excesses, until the former has ceased from sheer exhaustion of the means, and the latter from the sheer impossibility of committing any more, the jaded stomach revolting against everything offered to it. In the great majority of the cases which I have seen here, the gastric mucous membrane gave evidence by the tongue of utter loss of tone, with great perversion, and sometimes suppression of the mucous secretion. The want of appetite, and the deficiency of biliary and fæcal secretions, also pointed to the oppressed and obstructed function of the digestive nerves generally. Nor do the brain phenomena lead to any other conclusion, for there we behold depression and stupor of mind, irresolution, and loss of volition, dull, heavy pain, and dulled senses. The skin, too, partakes of the same inactivity, and is bloodless, harsh, inelastic, and altogether obstructed in its perspiratory office. In addition to all which, it will be found that the patient is of rather a slow than a vivid temperament of body, has a slow pulse, slow movements, and but a small degree of mental vivacity.

Taking these facts into consideration, the indications of cure are, to remove obstruction of function, and to give tone. Before prescribing, with a view to the former, it is necessary to ascertain well whether there be no lingering of active irritation in the digestive organs, or no commixture of nervous disorder with the mucous. Reference to the subject of nervous dyspepsia will show how this is to be ascertained. If such is found to be the case, it forms a third indication, and the *first* to be attended to. This is done by the daily use of the wet-sheet packing, and, perhaps, of nightly fomentation too. When by these means the pulse has lost all sharpness, and pain and gnawing of the pit of the stomach, &c., are reduced, we proceed to remove the obstruction to the function of the mucous membrane. This is done by rousing the *outer* mucous membrane, the skin, to re-assume its office by bringing to it a quantity of blood—of blood whose excess is oppressing the office of the *internal* mucous membrane. The sweating process is one of the means employed for this purpose, with the cold shallow bath for three or four minutes after it, so as to produce a vehement revulsion to the skin. Sweating should be used every day, or every second day, according to the effects of pain or palpitation it produces in the head and heart; and it may be done either before breakfast, or a couple of hours after it. As the object is not to lose a quantity of perspiratory fluid, but to draw blood to the surface, the patient may go into the cold bath when the moisture has been on the skin eight or ten minutes. Twice in the day he should take a cold sitz bath for thirty minutes; and after the bowels have been brought into action, the douche may take the place of one of the sitz baths. At this point, also, the sweating may be relaxed for a period. But as the effect of the sweating and douching is to rouse the system to extraordinary efforts, it may be well, now and then, to take a wet-sheet packing, in order to obviate the generation of constitutional irritation, into which those efforts may run. To further them, the patient, during the above treatment, should drink water copiously—that is, from seven to ten tumblers daily, by which he both quickens the chemico-vital changes of the body, and dilutes the morbid secretions of a diseased membrane. Indeed, water-drinking is a very important part of the treatment of mucous dyspepsia, in which the mass of the blood is always more or less diseased, as a consequence of bad gastric juice and imperfect digestion, not to mention the drugs that have been absorbed into it during years, and taint its current.

Meantime, this copious water-drinking, and these long sitz baths, demand a good amount of exercise to promote the absorption of the one, and to produce re-action after the latter. And, in this form of dyspepsia, walking should be practised for an hour, or more, before each meal, and may be beneficially varied by horse exercise. Sedentary, silent, and idle practices, are most prejudicial here. Even in the house, the mind of the patient should be occupied with conversation, games that interest without stretching the attention, and books of fancy rather than philosophy.

The diet must be regulated by the amount of appetite, especially at the outset of the treatment, when it is, for the most part, very deficient, and is even replaced by loathing of food. It would be absurd, in such case, to put strong food, or much of any kind of aliment into the stomach, when there is neither muscular movement enough to aid in, nor healthy gastric juice to effect its digestion.

It is better to withdraw animal food for a time, and give the patient farinaceous and milk diet; for milk generally agrees in mucous, but seldom in nervous indigestion. The same objection to hot liquids which obtains in nervous, applies to mucous irritation of the stomach, though liquids generally are more admissible here than in the former instance. But as this implies a low degree of nutrition, so, while such diet is in use, modification must be made in the rule for exercise just propounded. During the first week or two of treatment, small diet and short exercise must go together. At the end of that time, the appetite very rarely fails to appear; and then is the period to make a gradual improvement of the quality of the food, giving white meat every other day, then red meat in the same manner, and by degrees, as more exercise, more air, and more water treatment are quickening the waste, and inducing appetite, allowing meat once daily, and augmenting the quantity of it. Details of these general directions must be regulated by the practitioner according to the fluctuating vitality of the patient. He is a very coarse manager of disease who gives a diet table, and leaves the patient to it through all the varying circumstances of a bodily frame under potent medical treatment—treatment which is daily and hourly effecting changes in that frame. But in any case, the quantity of food should be kept under, particularly as in mucous dyspepsia the sympathy with the brain is great, and the circulation of blood there tending to fulness. In fact, chronic mucous dyspepsia is the great parent of *apoplexy*.

When stronger food and more exercise are taken, the clothing should be decreased, and flannel underclothes dispensed with. In a few cases, cotton drawers and waistcoats may take the place of flannel, if it be the winter; but if warm weather is expected, it is better to give up both. This lifeless skin must receive all the stimulus which air, as well as water can afford to it, and it must be made to perform its full share of the functional changes which constitute life, and which, in this kind of dyspepsia, are almost wholly performed by the wearied and congested internal skin, the delicate and highly sympathizing mucous membrane of the stomach.

The following case is in exemplification of what precedes:—

CASE II.—MUCOUS INDIGESTION.

A gentleman, thirty-nine years of age, after masking acute attacks of indigestion for years by the usual means of a mercurial and a purgative, and indulging freely, meanwhile, in the causes of it—namely, good luncheons and dinners and bad hours—at last came to a stand-still from sheer loathing of food. The most potent condiments would sometimes enable him to get down a small quantity of meat, or a larger quantity of scalding soup: but spite of these and innumerable tonics, vegetable and mineral, he went from bad to worse, slept incessantly, but with horrid dreams, was either listless or irritable when awake, complained of dull headache, thirst, and bad mouth, became corpulent in the body, puffy in the face, emaciated in the limbs, and dirty-skinned all over. The kidneys acted little, the bowels less, and the skin not at all. No exercise, no medicine could make him sweat, and he expressed his total disbelief of my power to produce it. His pale gums, red and yellow tongue, and almost bloodless lips, showed the stoppage of blood-making and the concentration of what blood there was in the internal parts. As usual, he had taken infinite mercury in different forms, and tonics of all kinds after the establishment of the chronic disease; and it was the alarming effect of one of these, iron, in the shape of chalybeate water, on the head, which alarmed him, and induced him to try the water treatment as a tonic without medicine. In fact, the tendency which this kind of dyspepsia has to cause apoplectic fulness, was fearfully aggravated by the iron water; which had been prescribed, because the patient gave signs of deficient blood—as if iron without digested food could supply it.

For the first five or six days I restricted the treatment of this patient to rubbing with the cold dripping sheet, morning, noon, and evening, one or two foot-baths daily, six or seven tumblers of water, the compress on the bowels, about three hours' walking. I allowed him to eat what he could, within the limits of plainly-cooked fresh meat and farinaceous matter; but he got no hot or alcoholic liquid. My object was to accustom his skin to the shocks of cold, and by the friction and exercise induce some circulation and development of heat in it. When I thought this was sufficiently attained, I had him packed with a damp towel in front of the body every morning, followed by the dripping sheet; which last was repeated as before in the day. As he warmed the towel well, I entered upon another phase of the treatment, the reduction of the internal irritation. His food was made entirely farinaceous, and if there was no appetite for that, he took none. As a consequence of this diet, exercise was forbidden, except for a short space after each bath. He now went on from the towel packing to the partial, and then the entire sheet packing, at first once, and then twice a day; in which he gradually warmed more and more quickly. After three or four and twenty days of this, his sensations were much improved; he had more elasticity and less somnolence. His tongue, though more moist, was even more furred than before; but his appetite was improved—not so his diet. At the end of the fourth week, however, this cheering prospect was overclouded; frequently recurring nausea and bitter risings troubled him; the water he drank rose into his mouth; he felt feeble, sometimes faint; yet his appetite remained through all this, not great, but better than for many months before: the bowels were more obstinate than ever, and the evacuations almost totally colourless. All this told me that the process of reducing the irritation had gone far enough, and that the digestive organs were making an effort to throw their mischief on some other organs, which effort made the present tumult of sensations. Now, therefore, was the time to aid these efforts by the sweating process—by inducing a transfer to the skin. I therefore sweated him, and this was effected in three hours, notwithstanding his defiance to the contrary. Three successive days of it seemed to free the liver from irritation, for the bowels opened, and bile began to appear in the evacuations. He also took two sitz baths daily, of half an hour each; wore the compress; drank eight or ten tumblers of water. The appearance of bile induced me to give him a small quantity of meat every other day; and with this augmentation of food, to augment the amount of exercise. This treatment did very well for a week; at which time it seemed to tax the head somewhat, wherefore the sweating was discontinued for two or three days. Again, after its daily resumption for five or six days, the head suffered; and I therefore had him sweated and packed in the wet sheet alternate days, the latter being intended to modify the exciting effect of the former. Under this plan he got on admirably; the bowels acted every second day; the tongue cleaned gradually from the tip backwards (an excellent sign—much better than when it suddenly cleans all over); the strength improved, as did also the appetite, which was soon gratified with a small quantity of meat daily; coincident with which he was told to take as much walking exercise as he could. During all this time the colour of the skin had been steadily improving, whilst the bulk of the patient had been rapidly decreasing—in fact, he had grown thin; he had lost a quantity of puffy, diseased flesh, and was gaining some useful muscle and healthy nervous matter. He was not, however, without bad days, when nausea would prevail, and even end in bilious vomiting; but this never lasted beyond the day, and was an indication of the continued efforts of the internal organs to rid themselves of their irritation. Nervous headache would sometimes occur too, which a foot-bath took off.

So the patient went on until nine weeks had elapsed: I then allowed his system to rest for a week, giving him only a shallow bath in the morning. Three weeks after he had resumed it, and when the bowels were in perfect order every day, he took the douche at noon, one sitz bath of fifteen minutes in the afternoon, the cold shallow bath for three or four minutes every morning, and the sweating only twice a week, the wet-sheet packing being altogether discontinued. The object of this plan was to produce the third, or tonic effect, after the reduction of irritation. In the fifteenth week of treatment, after a few hours of malaise, a small boil made its appearance in the fleshy part of the loins, and grew to a good sized one in four or five days, but with no constitutional disturbance, though with a good deal of inconvenience in movement. Appetite and all the functions went on well the whole time of this boil, which suppurated, discharged, and after a fortnight dried up. Immediately after this, the patient left me, and at his home only took the morning shallow bath, and five or six tumblers of water daily. Nevertheless, he had, from time to time, during the following four months, a boil occurring in different parts of the body, which teased him for a few days by impeding some movement, but the inflammation of which was effectually prevented from being excessive by the application of wet cloths to it. Altogether this patient was under my immediate care eighteen weeks, and the action of the treatment remained more or less for four months afterwards; so that I look upon this case as under treatment for eight months. He had been more than that number of years getting worse.

The above case presents a more complicated and a more serious state of disorder than the preceding one, and, in fact, mucous dyspepsia is always a more dangerous malady than the nervous form, which, however, is usually more tedious, and requires more nicety of treatment. In mucous indigestion, there is first of all an inflammation of the lining membrane of the stomach to subdue, towards which, fomentations and the wet sheet are directed; then there is blood to be made to nourish the exhausted body, particularly its extremities and skin, and the appetite, which grows as the inflammation diminishes, effects this, aided by the copious taking of cold water; and lastly, but simultaneously with the formation of blood, there is the necessity for directing it towards the exterior, so as to prevent its congestion in the very internal organs which it is the aim to relieve, and this the sweating and douche tend to effect. So that it will be seen how complicated the indications of treatment are in such cases, and how much patience, both on the part of the patient and physician, is necessary for *cure*. You may give fictitious, temporary appetite, by bitters, &c.; you may send blood to the surface for a period with various stimulants, but you can neither *maintain* appetite until you have got rid of mucous inflammation, nor *keep* blood on the surface until you have made it, and directed it thither, and these two ends can only be fulfilled by the hygienic means of the water treatment. But another feature of these cases which requires much judgment to detect and manage, is the tendency towards fulness of the head, in proportion as he finds the predominance of which, the physician must relax his measures, the sweating more particularly. The liver, too, is generally gorged, if not more deeply involved; but the sweating is most powerful in relieving that condition. Of course, if there be signs of softening, or any other organic change of the brain, or permanent hardening or enlargement of the liver, the case is not one for treatment, except, in the latter event, for mere palliation;

when the brain is organically affected, it is dangerous to meddle with any treatment.

Nervous dyspepsia very often generates mucous dyspepsia, just as, in the chest, *nervous asthma*, by constantly irritating the lungs, and bringing them into excessive and irregular play, gives rise to inflammation of the air-tubes, and mucous or *humid asthma.* Even whilst the nervous state alone predominates, the mucous lining undergoes sudden changes of secretion, indicative of very irregular circulation of blood in it; and the occasional dryness, thirst, and foulness of the mouth, point to passing inflammatory congestion in that membrane. Repeated through months or years, and exasperated by indiscreet gratification of the appetite which generally attends nervous indigestion, this congestion becomes more and more permanent and intense, until a condition including the symptoms of both kinds of indigestion is established, and renders the life of the patient a scene of continual suffering. Into the details of the signs of this combination it is unnecessary to enter, after what has been said of its two elements. Many dyspeptics appear at Malvern with this miserable complication, which, from the histories they give of themselves, is most commonly the result of neglected diet and excessive medication—facts, for the most part, connected, the medicine sweeping away the evils of the feeding, and both plunging the stomach into more irremediable disorder. However, there are varieties of intensity, and the majority can walk about and occupy themselves in some way or other. But the following is a case of the most extraordinary character; and the result is not a little extraordinary also. It is one of the most striking illustrations of the power of the water cure in stomach disorders, and the subject of it, who has taken up her permanent residence at Malvern, is delighted at any opportunity of testifying to others the resurrection of all her nutritive, moving, and thinking powers, which she owes to that mode of treatment.

§ 4. COMBINATION OF NERVOUS AND MUCOUS DYSPEPSIA.

Case III.

In 1818, P. S——, a member of the Society of Friends, who was then in her nineteenth year, after suffering many dyspeptic symptoms of a minor kind, was attacked with vomiting of no ordinary character. It was not a mere rejection of food, but a straining until the face and tongue became purple. Neither was it an occurrence of any particular part of the day; it was at times nearly incessant, and at least five or six times a day. She has been as long as eleven days continually with a basin near to her head, so pressing and unceasing was the sickness, during which time she took no food whatever. In this, and in many other attacks of similar intensity, she was under the necessity of taking sustenance by injections of broth, &c., so utterly incapable was the stomach of retaining anything. This state continued from 1818 to 1833. Throughout the whole of these fifteen years very few days passed without the sickness. On one occasion only, it failed to come on for nine consecutive days, and on two or three other occasions she got over five days without it. It was not so constant and bad in the first year or two, but got very rapidly to its worst degree. The prostration induced by this vomiting and incapability of retaining food, obliged her to remain in bed always; *day and night for fifteen long years she kept her bed—was never dressed during that time.* All manner of medicines were administered, but with no good result. All kinds of diet were also tried to no purpose. At first it was very low, and after a time this was abandoned, and she was made to swallow meat three and four times a day, with brandy, wine, &c. Her appetite was capricious.

At length, in the early part of 1833, the vomiting relaxed in degree and continuance without any appreciable cause, and for six months she was comparatively free from it. At the latter end of the year it returned, and grew gradually worse, until it was as bad as ever, and continued so until July, 1843, when I first saw her. Of these ten last years she was compelled to remain altogether in bed two years and a half, the rest of the time was spent between the bed and the sofa; she never put her feet to the ground. During the whole of the above period, the bowels had inclined to relaxation rather than constipation.

So far for the previous history of this extraordinary case, which I have given in almost the very words in which she delivered it to me. Being in Birmingham on professional business in July, 1843, I was requested by one of my patients there to call on P. S——, who, with considerable hesitation, had agreed that I should do so. She had every possible prejudice against the water treatment, had long given up hope of alleviation, not to speak of restoration, and was infinitely distressed at the prospect of beholding another doctor who could do her no good. Strange to say, however, before I had been half an hour with her she consented to reach Malvern in some way or other—a resolution so unexpected by herself, so opposed to all that she had been told to dread from the water cure, and so unlikely at the first visit of a strange physician, that she ever since declares it, looking to the event, to be a special interposition of Providence for her recovery.

Within a week after this interview, P. S. reached Malvern. I shall not enter into the detail of symptoms; she had every bad symptom that could be drawn from either kind of dyspepsia. Two of them deserve mention. The tongue was enormously swollen, fiery red at the tip and edges, and covered with a thick brown fur—signs highly indicative of the complicated character of the malady. So great was the sensibility of the stomach, and, indeed, of the whole abdomen, that passing the hand over it at the distance of two inches, produced convulsion of the whole surface, and vomiting. This will give some idea of the intense irritation which must have existed in the network of ganglionic nerves within.

I began the treatment with hot fomentations on the abdomen for two hours night and morning, a light compress over the same part being worn in the intervals. Her food was confined to a wine-glass of barley-water, and the same quantity of cold water at alternate two hours. The vomiting diminished in frequency even under this partial treatment. At the end of three or four days, I packed her in a wet sheet for half an hour, and immediately on coming out of it, in another one for three quarters of an hour, sponging with cold water being used after them. The effect on the nervous system was immediate; she declared she had not known such calmness for thirty years. She was packed in this double manner again in the middle of the day, and a third time in the evening, making six wet sheets and three ablutions in the day. She was fomented for an hour at night, and wore a compress on the stomach day and night. The food was gradually advanced in quantity, but still limited to barley-water, arrowroot-water, and gruel. The quantity of water was also gradually advanced, until at the end of three weeks, she was able to take four or five tumblers daily. *By the end of those three weeks, the vomiting had ceased, and has never returned for one second of time since, now two years and a half.* I must here remind the reader, that for twenty-five years this vomiting had been nearly incessant. I must further remind him that "air and exercise," which are said by the opponents of the water treatment to do all, and the water, in its various applications, nothing in that treatment, had no room for operation here, the patient having been in bed the whole of the three weeks, during which the same number of wet sheets were continued, and the whole treatment persisted in, except that the fomentations were discontinued at the end of the second week. The wet sheet was the principal agent in this wonderful change.

But broken as she was by long illness, the blood and nervous energy and muscles of the body exhausted, the restoration of the locomotive power might be expected to be a very forlorn hope. Yet so admirably did the wet sheeting and cold shallow baths (for she was soon able to take these) act in bringing the stomach into better digestive order, and thus in forming nutritive blood for the nerves and muscles, that, at the end of two months, she was able to walk three hundred yards, *and between the third and fourth month from her commencement of the treatment, she walked a few yards more than a mile of gentle descent, rested an hour, and walked the same, ascending, back again.* Here, again, let the reader recall that the patient had for twenty-five years been unable to walk, had passed the whole of that time in the bed, and on the sofa. To bring her to this power of walking, I had, of course, taken advantage of the augmented power of digestion, and had given her gradually increased quantities of chicken, mutton, bread, and a small quantity of butter; this was the whole of her aliment. Under its operation, and that of the active treatment, the tongue gradually threw off its brown coating; this was the first change, and it showed that the mucous irritation was the first to diminish, as it generally does; for the diminution of the swelling, and redness of the tongue, the indications of nervous disorder, remained long after the fur had disappeared, as did also the exquisite tenderness of the pit of the stomach, another nervous symptom.

It is needless to dwell on the prolonged treatment of this case. Suffice it to state, that the wet sheet, the chief agent, was increased or diminished in frequency with the exasperation or lulling of the internal irritation, that the cold shallow bath was in daily requisition, that the cold sitz bath was taken as a tonic twice a day, and that she drank from eight to ten tumblers of water daily. This continued for a year, with various degrees of assiduity: but long before that time had expired, P. S. was one of the most peripatetic persons in Malvern, walking from three to four miles with ease. She has never "looked back," but has gone on from good to better. Lately she has been visiting, near Birmingham, has gone out to dinner parties, kept the hours of the house, and came back protesting she never was so well in all her life.

Now, had I never seen but this one case illustrative of what the water treatment can do, I should have considered it very good ground for reliance on that plan of treatment in diseases of this class. A more intense degree of mucous and nervous irritation of the stomach it would be difficult to meet with, and this was further shown by its effects on the animal nervous system, which for twenty-five years, had been almost entirely paralyzed by the excessive irritation radiating from the stomach. I confess, that, armed only with the old mode of practice, I could have done nothing with such a case, and no wonder, when so many leading men, both of the metropolis and the provinces, had failed in the attempt to do something.

But this is only one of very many instances which I could give of the very extraordinary results of the water treatment in this complicated form of indigestion, in which I regard it as all but infallible. In the case just given, the effect upon the brain and spinal cord was determined and great; but this is not necessary; the stomach irritation may play chiefly on the nerves which are given out from the spine to the scalp, the trunk, and limbs; whilst the stomach itself may be the seat of phenomena in many respects different from, but scarcely less intense than those detailed in the last case, although recognizing the same morbid condition of the mucous and nervous tissues of the digestive organs. The following case will also show how such frightful amount of mischief is generated.

Case IV.—Nervous and Mucous Indigestion.

The lady whose case I now give is at present twenty-nine years of age. Being at a boarding-school in this country, in her sixteenth, she had, as girls during the growing age often have, a slight stomach disorder—an ordinary passing dyspepsia. She was inordinately dosed with medicine for it; upon which headache commenced, with pain in the right side. This last was treated as liver disease, and enormous and incessant doses of calomel were administered in combination with strong purgatives; blisters were applied over and over again to the right side, and kept open with tartaric emetic cerate; and mercurial ointment was rubbed into the side. The headaches, which were distracting, and came on after eating meat, or after being in a hot or crowded room, were treated by bleeding from the arm, which operation was performed *twice* in one year, the eighteenth of her age. Treatment on this plan *was pursued during four years* that she remained at school! long before the end of which time the simple indigestion had been converted into an inveterate chronic one, as may readily be conceived. Could the blindness of ignorance—could the infatuation of drugging go beyond this? The sequel will show that it could.

She left the school with confirmed chronic dyspepsia, liable to blaze into an acute form on the smallest provocative. Being a girl of great natural spirit, her animal nervous system was not rendered incapable of its functions, notwithstanding the irritation that had been deeply fixed in her organic nerves. She went to Torquay, took purgatives, which had now become necessary for her, and gentle exercise. In an evil hour, on a slight increase of the dyspeptic symptoms, the doctor was sent for. Drugging, more violent than ever, began: every species of medicine was tried on her unfortunate stomach, and all in the strongest doses; until after *eight months* of this destructive process, the medical attendant declared "*he could do nothing more,* *for he had gone through the entire Pharmacopœia:*" the *ipsissima verba* of this candid confession!—a confession too, made to one who came from his hands much worse than when she came into them! The *absurd* part of this treatment (a stronger epithet applies to the treatment generally) is, that whilst this monstrous array of irritants was being applied to the stomach, the diet was brought to the lowest sustaining point, *lest the food should irritate the stomach!*

After this assurance of having swallowed the whole Pharmacopœia. the lady's parent had faith enough to try the circle again, and the patient was taken to Leamington. There the diet was reversed, and was ordered to be highly animalized and concentrated. The strongest preparations of iron and powerful mineral acids, as well as other tonics, both mineral and vegetable, were given, to cure a stomach in the depths of inflammatory action! But if the purgatives of Torquay had been strong, they were mild compared with those she now took; they kept up incessant drastic purgation; between which and the iron, acids, &c., her monthly illness, which had hitherto been regular since her thirteenth year, stopped; whilst her dyspepsia steadily grew worse. From this unpromising practice, which she persevered in for ten months, she passed to that of another practitioner in the same town.

Now, again, the diet was changed from flesh, and made to consist principally of fish. The physic was also changed, and strong alkalis were substituted for strong acids. But lest they should not suffice, it was deemed expedient, with what rational view does not appear, and it would puzzle the profoundest pathologist to discover, to maintain a state of constant *nausea* with a variety of emetic medicines. Yet whilst it is universally acknowledged that *nausea* is a state of *excessive* stomach irritation, and whilst it was maintained by the emetics alluded to—at the very time it was also deemed essential to apply burning *moxas* over the region of the stomach to *counteract* irritation within! *Moxas* externally, and emetics, purgatives, and fish internally, were persevered in for one year; for one whole year the patient was kept in a state of incessant nausea! Further, as by the former treatment, the monthly illness had been stopped, and the present one did not restore it, artificial relief was attempted by opening a vein in the foot, and allowing a free bleeding once a month; the result of all which was a reduction of strength, both organic and animal, which was alarming. It should be noted, that on one occasion, both practitioner and patient were frightened at the symptoms of prostration caused by the nausea and purgation, and agreed to eight days' respite from all treatment. To this hour she speaks with energy of the immense relief she experienced during those days: they formed an oasis in her year of misery.

One year and ten months of Leamington treatment was deemed a reasonable trial. She was now taken to her native place, Dumfries. Her attendant there, addressing his skill to the restoration of the monthly illness, was so successful in that particular as to bring on the opposite extreme, and she was drained of blood. The medicines by which this was effected caused her exquisite internal pain, which was not improved by the violent purgatives that were liberally given. However, the illness restored, no opportunity was given for prolonged medication. She was taken to the Isle of Man for change of air. There she remained between eight and nine months; but her dyspeptic sufferings led her—for when does hope of relief cease?—to seek medical advice again, notwithstanding the sad experience of the last six years and a half, and for months she took blue pills daily; for by this time, so exhausted was the power of all the digestive organs, that some such stimulant to secretion was actually necessary, and the medical men who prescribed it had no other alternative in the list of the usual remedies. It is necessary to add, that purgatives *always* were in requisition. At the end of nine months she married—being in her twenty-third year—and went to Germany, where she travelled about for several months, staving off her most distressing symptoms with soda, sal-volatile, opiates, &c. She returned to Dumfries, and was confined with a female child. During her pregnancy her dyspeptic signs were much relieved, the organic irritation being transferred, for the time, from the stomach to the womb. After confinement, they returned with renewed intensity, and now showed signs of extension to the air-tubes of the lungs. The inflammation of the ganglionic nerves of the stomach also now caused great and constant pain between the shoulder-blades. The attendant (who I hope and presume was "ignorant of the knowledge" of the stethoscope) made up his mind, from the cough, expectoration, and pain in the back, that she was far gone in pulmonary consumption, and announced it so. How did he treat *that?* She was confined to a heated room, wore a respirator, had leeches and cuppings between the shoulder-blades, and constant blistering! Strange enough treatment for consumption! but how much stranger for indigestion! which it was; for on taking courage and getting away to the Isle of Man once more, all the chest symptoms disappeared, but the dyspeptic were there as before.

From this period she travelled about and stayed at home alternately, always suffering from intense dyspepsia, always taking purgatives, soda, tonics, &c., but never one bit better. At one date she was induced to try what homœopathy could do for her, and the result, as far as the headache and some other nervous symptoms went, was very satisfactory. It does not appear, however, that circumstances allowed of her giving it a long trial, nor of her being near the medical prescriber. Still homœopathy was the first treatment that had done her *any* good—that had not, indeed, done her positive harm. But to crown the history of this most unfortunate case, a series of feverish symptoms broke out a short time before she came to Malvern, which were mistaken for rheumatic fever, for which she was bled in the arm, frightfully dosed with calomel and opium, &c. After six days of this mistake, an eruption of measles took place, of which all these feverish signs had been the forerunner; and there is little doubt that had the body not been interfered with, and its powers depressed and misdirected by the treatment just mentioned, the eruption would have taken place much earlier, and the constitution have been spared the prolonged struggle to throw out the measles, the debilitating effects of the bleeding, and the irritating effects of the calomel. However, her elastic nature got her round; and it was on her recovery that she came to Malvern; not with a view of remedying her now complicated ailments—for she had given up all hope of that—but with the desire that her husband should try the water treatment against a formidable amount of nervousness with which he was troubled.

Here, then, is the instructive history of a disease which commenced in a simple attack of indigestion in a growing girl of excellent constitution. Had comparative, or, if necessary, total abstinence from food, been practised for twenty-four hours, and only dilution with very thin gruel and toast-water allowed, there can be no reason to doubt that, in such a constitution, the digestive organs would have recovered themselves, and all would have been well; but the first unnecessary dose of calomel led to all the subsequent mischief; it set up the irritation upon which all the subsequent practitioners played, each one having his own tune, the discord and contradictions of some of which I have briefly exposed *en passant.* No apology is necessary for the length of this account; it is not often one gets so complete a narrative of the growth of a long illness; and a great deal may be learnt from it. I may state that it is from the lips of the patient herself, who, summing up the treatment she had undergone, exclusive of medicines, tells of nine bleedings from the arm, bleeding from the foot every month for a year, leeches without number, and to all parts of the abdomen and chest, cupping frequently, blisters innumerable; and, adding up the medical men she had consulted during those years of suffering, she finds them reach the dreadful number of twenty-two! In the above account, only those are mentioned under whose care she remained for a prolonged period.

To return. This lady reached Malvern in the month of March, 1844. The account of her at that time is as follows. Incessant and frequently very violent headache at the back or the top of the head, or over each eye. Sleep most uncertain; always broken and busy. Vision constantly annoyed with black spots. Pulse small, hard, rapid, having all the signs of intense irritation. Tongue fiery red, split in all directions, and swollen; not often dry, and not much furred; gums very red and spongy; throat always more or less sore, and exhibiting small blisters or pustules, which, after causing immense irritation, came off; constant and intense burning in the stomach; extreme tenderness on pressure over the pit of the stomach; acute and constant pain in the back between the shoulder-blades; appetite very capricious, but when present, always small, and requiring tempting cookery. Pain after eating everything, with fluid risings of extreme acidity, which obliged her to take soda after every meal; even a wine-glass of spring water rose acid in the mouth soon after being swallowed. Indeed, this had been the case for twelve years; during all which time, also, she had been altogether unable to take certain articles of diet, so great was the pain they caused, among which were especially *bread* and *tea.* The whole abdomen was enlarged by flatus at all times, but especially after eating the smallest morsel. There was no action of the bowels whatever, without the assistance of medicine. The kidneys showed morbid action in the character of their secretion, which was charged with pink sediment and gravel. The monthly discharge was effected with extreme pain, was scanty and pale, and never continued longer than two days—very often not more than one. There was a great sense of bearing down of the womb, which, in fact, was considerably fallen down, swollen, and heavy. Thus there was not any part of the abdominal viscera which the digestive irritation had not reached and involved. Its extension to the brain was shown by the extreme nervousness under which the patient constantly laboured, as well as by the want of sleep, &c., already recounted. The chest had escaped the mischief: nor, although she had been treated as one far gone in pulmonary consumption, could any the least disease of the lungs be detected.

Externally, the frame gave everywhere signs of bad nutrition. The skin was pale, and the flesh soft and inelastic. The walking power was in keeping with the innate and morbid nervous character of the patient; she could walk strongly and quickly for a short time—this her impulsive nature permitted; but exhaustion soon followed; there was no sustainment of the power—this her morbid nervous system did not permit. Indeed, throughout her long illness, the elastic nature of this patient had been exhibited; and without it, without the undying spirit it imparted, she must have sunk under the multiplied ailments, or been the victim of some internal organic disease.

The treatment of this complicated case by water was spread over many months; and I shall therefore not attempt any detailed account of it, but recite the chief stages of its progress. It commenced with only the rubbing sheet every morning; the compress on the abdomen day and night; the restriction of diet to cold liquids, and the simplest solids; and the taking of two or three tumblers of water in the day. Fomentations for an hour at night were added to these; and soon after, packing in the wet sheet, which at first was practised once and afterwards twice a day; the cold shallow bath being used after each of them. The sitz bath was prescribed once and then twice daily, so soon as the walking power showed signs of more continuous energy; and this it did, by the fact of her being able to take exercise before breakfast for a half and then for a whole hour—a feat she had never been able to compass; for although much urged to do so when at Leamington, the attempt, even for a few minutes, always ended in faintness and loss of appetite. During the period when these processes were being gradually increased, the quantity of water was also increased, until she took from twelve to fifteen tumblers daily; and for several days she took, without my direction, however, as many as twenty. It should be stated, however, that some of the water she drank was always rejected from the stomach in a perfectly acid state: this continued for many weeks. It was also during the process of wet-sheet packing, that the appetite underwent a marked improvement, it became more decided and more steady. The bowels remained exceedingly torpid, now that they were deprived of their usual purgative stimulant: still, they acted to a small extent, and I was contented with that, as the general treatment obviated feverishness, and it was essential, at all other risks, to withdraw utterly from the digestive canal the drugs which had so grievously damaged it.

When it appeared to me that active irritation had been subdued to a certain extent, I hoped by the sweating process to rouse the secretorial activity of the liver, and general mucous membrane of the digestive canal. That process was therefore tried with the effect of bringing about a somewhat better action of the bowels. It was alternated with the wet-sheet packing, and at the same time the sitz baths were continued, as also the compress, and the copious water-drinking.

Such is the outline of the treatment which was persisted in for nearly six months, with the striking results of rendering the stomach far more tolerant of food, reducing the acidity, gnawing, and burning of the stomach, inducing a state of bowels, not quite satisfactory it is true, but which allowed of their occasional action always without medicine, procuring more sleep, and generating an amount of walking power to which she had long been a stranger. Her dyspepsia—the accumulated dyspepsia of so many years of bad treatment—was indeed far from being cured; but it had gone infinitely further in that direction than hitherto, and all the patient's sensations announced it. In the midst of the general organic excitement which the treatment had aroused, whilst all the organs were labouring to relieve themselves, a strong mental agitation occurred to her, and *nervous fever* announced itself in her unlucky frame. Whether a fever would have been the *crisis* of her complicated and prolonged complaints, as I often anticipated, or whether this particular one stood in that character, it is impossible to say, inasmuch as the coincidence of a mental agitation leaves the possibility of its originating from that cause alone. It was, however, the most violent and perilous I ever beheld. How it was treated, is not germane to the history of the dyspepsia; but some idea of the activity of the treatment may be gathered from the fact, that on one day she was folded in twenty-one successive wet sheets between 6 A.M. and 11 P.M. At the end of six weeks, she was tolerably well recovered, and I recommenced the treatment of the dyspepsia. As excessive irritation no longer existed, I did not urge any great amount of treatment. She was only packed once a day with a towel in the front of the body, the cold shallow bath after it, and sitz baths of twenty minutes each twice a day: the quantity of water was moderated to five or six tumblers in the day. In this manner, with the addition of occasional fomentations, she went on gaining in her gastric sensations until the month of March, 1845, just one year after her arrival at Malvern, when she became *enceinte.* As no reliance could be placed on the strength of the uterine organs, it was deemed best to suspend all treatment, except the morning ablution with cold water. The period of pregnancy was entirely free from suffering, save from occasional bad headache, and pains down the legs. But she ate and drank of anything with impunity, and she gained flesh. This, no doubt, was due to the transfer of all visceral irritation to the womb, and I did not expect this perfect state of digestion to continue after delivery. That event happened in December, 1845, and the child was a superb one, weighing twelve pounds at the birth. Now that she has recovered, she sums up her gains to this date, in the abolition of all painful and distressing sensations after eating, in a better appetite, in the total removal of acidity of stomach, in the capability of taking a number of articles of diet which her stomach had not been able to tolerate for many years, in the improved state of the bowels and emancipation from drugs, in a much healthier state of the monthly discharge, and absence of all morbid sensations about the womb, in better sleep, and in firmer flesh. Against these are to be placed the occurrence, from time to time, of severe nervous headaches, such as she used to have continuously, frequent tic pains about the hips and legs, and rare paroxysms of nervousness. Still her *viscera, her vital parts*, have been saved from organic disease, to which they were hurrying; the substantial malady, the diseased circulation of the internal parts, has been subdued. The *sensations*, the nerves, are always the last to yield in all maladies, and I fully expect they will do so in this trying case. Be it remembered, meanwhile, that the whole time occupied by the patient in the active and steady pursuit of the water plan does not exceed ten months. She is now recommencing its active employment, with the aim of ridding herself of the morbid nervous phenomena which still remain out of the long list of dangerous symptoms which she had on coming to me, and which she very reasonably attributes to the atrocious drugging to which she had been subjected.

If the reader would hear the "previous histories" of cases that are detailed to me, and which *all* resemble more or less that just given—histories of violent and irrational experiment, not to call it treatment—and then to see the appliances of the water cure calming down morbid sensations, and abolishing morbid actions that had existed for years, and yet had been intensified by the rude attempts of aimless medication, he would wonder how this last continues to flourish, whilst the simple yet potent hygienic plan of the former is pointed at as certainly destructive of health, if not of life. Here is another case in which all treatment—at least, all the treatment which two and twenty medical men could propose—was essayed, and from each one the patient came out *worse*. Now, had she only not become worse by the water treatment, the superiority of the latter would have been demonstrated: it would have been *autant de gagné* instead of so much loss. But with such a result as this patient can vouch for, it would be preposterous to deny the immense power of the water plan, and its far greater certainty of action in dyspeptic cases, over that in ordinary usage. In short, in the three kinds of dyspepsia which have been treated of, this hygienic treatment is the only one that offers *any probability of cure*. Relieve, palliate, wind up the stomach to the digesting point as you will by medicines, it falls back to its old point of irritation and its former bad habits the moment your remedy is suspended, and after a time, in spite of your remedy being continued. The stomach is not allowed the opportunity of *recovering itself*, the only recovery that is worth anything: it will not, it cannot be *forced* into recovery. Even when that most rational part of the ordinary treatment of dyspepsia, rest of the stomach, country air, and regulated exercise is had recourse to—and it is seldom advised until medicinal remedies are exhausted, although it ought to be the *first* to be tried—the beneficial consequences which might flow from it are constantly obviated by the mischievous superfluity of some medicated water or some cordial bitter, in deference very frequently to the strong prejudice and feeble understanding of the patient. But however strong, however general the prejudice, and however true it may be, that in diseases of organs distant from the stomach, medication may be curative: I cannot but repeat the strong conviction I have that *medication never did, never will, never can, cure a case of chronic dyspepsia: and that, short of organic change, the hygienic water treatment seldom if ever fails to cure it.*

§ 4. GASTRO-ENTERITIS.—CHRONIC INFLAMMATION OF THE STOMACH AND SMALL BOWEL.—ATROPHY.

The two former of these terms signify the same thing the first being the technical, the second the vernacular expression. The third, *atrophy, or wasting*, is the consequence of the double inflammation of the stomach and small guts. I will endeavour to render the connection between them clear.

The mucous membrane which lines the stomach continues its course downwards to the bowels, lining them also. Arrived at the first, or small guts, it is pierced in innumerable points with small orifices, which are the mouths of the most minute tubes, the insides of which are also lined with prolongations of the common mucous membrane of the bowel. Now the office of these mouths, of these tubes, is to select and absorb the chyle or *white* blood as it descends from the stomach after digestion, and after the addition of the bile *en route;* and the office of the tubes themselves is to convey this white blood into the great vein which finally pours its contents, as yet unfit to nourish the body, into the heart, which propels it into the lungs, there to be exposed to the atmosphere, to become *red* blood, and to be rendered fit for the purposes of nutrition. It will be plain from this sketch, that whatever prevents the free absorption of the chyle in the small bowels, prevents the nutrition of the whole body; and as the waste of the body of necessity goes on, the want of a recruiting supply from the organs of digestion is the exciting cause of its atrophy.

More or less atrophy always attends the chronic inflammation of the small bowels, because the mouths of the absorbent tubes alluded to, are more or less inflamed and swelled in common with the lining membrane of the bowels on which they debouch, and the passage of the chyle through them is more or less prevented. This isolated disease of the bowels is more commonly seen in growing children, probably in consequence of the excessive labour of those parts, necessitated by the process of growth. But in adults it is more frequently accompanied by a similar inflammation of the stomach: hence the compound technical name it bears. This of course complicates the malady; for in such case there is not only obstructed absorption of chyle, but chyle of a badly elaborated kind, unfit for the healthy nutrition of the frame, which thus suffers both in deficient quantity and quality of nourishing liquid.

The symptoms, as far as the stomach is concerned, are those of nervous and mucous dyspepsia, the appetite being capricious, ofttimes voracious, with sometimes suffering, at other times none, after eating. But in so far as the small bowels are implicated, the symptoms vary considerably, except in the emaciation, which is always in greater or smaller degree. When the inflammation is less diffused over the lining of the bowels, more concentrated in one spot, and more intense, as evidenced by feverishness, the wasting is not so great (the reason for which will be clear from what has preceded); but the brain phenomena of irritability, restlessness, sleeplessness, and headache are more decided: for in that case the brain is tolerably well nourished, and is therefore in better state to recognize and re-act upon the irritations proceeding from the disordered viscera. The circulation of blood also is more vehement, the pulse is more excitable, and fever is thus more readily induced. Hence the sleepless feverish nights of patients suffering under gastro-enteric disorder of this kind. The skin is dry and hot, especially of the palm of the hand. The tongue is of the kind called "strawberry," that is to say, its papillæ are very red and elevated, and between them there is a whitish mucus, the two giving the appearance of a ripe strawberry; it is also inclined to dryness. There is sometimes, but by no means invariably, a degree of tenderness in pressing the bowels, which are shrunk, giving the abdomen a constricted, hard feel. Constipation is usual. This kind of gastro-enteric inflammation may end by wasting, from continued, smouldering fever: or the sympathy with the brain may render that organ too full of blood, and apoplectic or paralytic seizure may take place.

When, on the other hand, the inflammation is general over the surface of the small bowels, and of a very chronic character, the atrophy is decided and great, and the brain phenomena less urgent; on the contrary, there is generally a tendency to somnolence and inactivity, and depression of mind. Neither is there much fever, and what there is of it is of a fitful, hectic character. The skin is devoid of moisture, but not without softness. The bowels are irregular, being sometimes in a relaxed state, which is due to the fact of chyle and other matters reaching the lower bowel, in which, as it was never intended to receive them, they act as unnatural stimulants, and provoke it to excessive action. At other times, they are very torpid. The abdomen partakes of the general emaciation, and feels like a board lying close upon the spine, so contracted is the calibre and substance of the bowels. The evil termination of this state is by fainting, the brain ceasing to receive sufficient blood to perform its functions, and the heart, deficient in energy from the same cause, failing to send blood towards the brain.

In deciding on the treatment of this chronic inflammation of the stomach and small bowels, we must ascertain which of these phases of it exists, and I have given the chief differences by which each may be known. The gastro-enteritis without much emaciation, and with fever, admits of more decided treatment than the atrophic kind. Besides fomentations, the wet sheet is applicable: the water drunk may be more copious, and exercise more extended, though never long continued. In atrophy the wet sheet is scarcely admissible, the *vis vitæ* being insufficient, in the first instance at least, to re-act upon it; and for some time all that can be done is to foment, compress, and use friction over the bowels; to apply friction over the whole body, with cloths wrung at first out of water at 90°, and gradually diminish the temperature; to give water to drink sparingly, and not under 50°; and to observe the most perfect rest from exertion, the frictions being a substitute for exercise. It is a condition requiring the utmost nicety of treatment so small, and easily overwhelmed are the organic powers on which we have to depend for self-restoration. I hesitate not to say, were the water-treatment applied in this malady, as it was recommended when first introduced into this country, that is to say, with incessant wet sheets, cold baths, and numberless tumblers of cold water to drink, every case of this malady would end fatally.

On one point in the treatment of this disease it is very necessary to dwell—the diet. It might be supposed that as much food as possible should be prescribed in wasting, especially as there is, very commonly, appetite for it. Yet it is very imprudent to permit any but mild articles of diet, and those in small quantities only, for a time. It should be remembered that we have to deal with the *cause* of the wasting, and that cause is inflammation of a membrane, to which the food, both before and after conversion into chyle, is a stimulus; on this score, then, it is desirable to limit the quantity and quality of food. But, moreover, it may be asked, of what avail is it to give the stomach large quantities of strong food to convert into chyle, when that chyle can not only not be absorbed, but will pass down to the lower bowels, produce irritative diarrhœa there, and in this manner actually hasten the dilapidation of the body it was intended to maintain? Plainly enough, this ought not to be done. The patient should take the mildest farinaceous diet, in small and oft-repeated quantities; but whilst thus reduced in diet, he should also be reduced in the wasting act of physical exertion; his exercise should be quite passive, and the repose of the body complete. By this means, whilst the *active* treatment is gradually withdrawing irritation from within to the exterior, the *negative* treatment of diet is withholding irritations which would be applied to the internal morbid part itself; the cessation from exercise rendering the restricted food sufficient for *organic support*, though not for *animal exertion*. By commencing the treatment thus, we are enabled gradually to steal a march on the inflammation which produces all the wasting, and, though a long and tedious operation, to get rid of it. In the form of the disease where the emaciation is not so great, and the feverishness greater, both these precepts of negative treatment require to be modified in favour of better diet and some exercise. In fact, this latter malady demands, with very few and trifling variations, the same treatment as the nervous and mucous dyspepsia; and, though many cases have come before me, I need not illustrate it by one of them, involving, as it would, some tedious repetitions. I shall, however, offer a brief account of atrophy or wasting, which terminated well under my care.

CASE V.—ATROPHY, OR WASTING.

Great mental distress was the exciting cause of the gastro-enteric inflammation which led to the atrophic wasting of the patient in this case, who was a man of twenty-six years of age. (I would here remark how often mental causes induce inflammation of the bowels as well as of the stomach.) Commencing as simple dyspepsia, the disease soon gave the signs of the extension of the mischief to the small bowels. Headache, irritability in place of depression of mind, restlessness, unquiet and short sleep, feverish skin increased by food, obstinate bowels, &c., all indicated the more circumscribed irritation. All this was going on for some time before he saw me; and against it, opiates for the sleeplessness, purgatives for the bowels, a course of mercury *to do something* (it was not clear what), and a course of iodine, in the shape of hydriodate of potassa, to do something still more obscure, were tried in succession, and each found wanting. Strong aliment, too, and strong tonics were given to prop the failing flesh and strength, and change of air to change the stimulus: all to no purpose. The youth went from bad to worse, and at length came to me in a state of half stupor, volition almost gone, and the limbs, over which it was to be exercised, reduced to skin and bone, the skin bloodless, the tongue, gums, and roof of the mouth whity-brown, and having a lifeless appearance, the abdomen shrunk to the smallest dimensions, cold flabby hands, dull eye, weak voice, short breathing, small slow pulse. He had frequently purging of the bowels for a day, accompanied by swimming and faintness of the head. Appetite of the same irregular kind, though more usually great than otherwise. Altogether, he had been ill for upwards of four years.

His horror of cold was so great, and his re-active power so small, that I could not for nearly a month do more than foment the abdomen at night for half an hour, keep the compress wrung out of tepid water on it, have the limbs and trunk rubbed night and morning with towels wet with warm water, and keep him on the sofa : the only exercise he took was an airing in a Bath chair for an hour daily ; and luckily the fine weather rendered this pleasant. The only food he had was cream, with tepid water and sugar, biscuit, rusk, toast, the various farinacea and rice, flower of cauliflower, and occasionally grapes ; all taken in small quantities at a time. Before the month was out, and by a graduated process, I had got him to bear friction with a cold wet towel, and to feel so much better for it as to desire it. He drank a wine glass of water frequently, but altogether, not more than two tumblers in the day. I now discontinued the fomentations, and used the frictions three times a day ; giving him more time for passive exercise in the air : the compress was worn night and day ; the food the same. After a fortnight of this, I ventured on the towel packing in front of the body. He was obliged, at first, to lie as long as two hours in it, without thoroughly warming it ; but, by degrees, this was shortened, and, by the end of the second month, he warmed a towel placed behind as well as in front. Another month brought him to the envelopment in the entire wet sheet, once at first, and then twice a day. At this point he began to use the shallow bath instead of the rubbing sheet. Previous to this time I had allowed him to take some mutton, chicken and veal broth, thickened with rice or barley, once a day ; but still forbade walking exercise. Neither this, nor a small quantity of boiled mutton, were permitted until towards the end of the third month ; neither agreed with him, and were discontinued for nearly three weeks longer, when he was enabled to take the equivalent of a mutton chop, and twenty minutes' walk, with impunity.

After this point it is needless to give details. The above will afford an idea of the gradual and cautious manner in which the treatment of such cases requires to be entered upon, and to throw considerable doubt on the statements imported from Germany, of persons with very little blood in them, and less flesh on them, being plunged into cold baths of all kinds in the very outset, and picking up flesh *à vue d'œil;* all which is exaggerated rubbish. Of this I am certain, that had I done so with this and two or three other patients in nearly the same plight, I should have extinguished them, and the little flesh they had would have gone its usual way. As it was, it required full seven months of the water-treatment to place this patient in anything like condition: he had regained the nutritive power; but even then he had a great deal to regain to reach his former *status.* This patient had no critical action; from which I conjecture that a naturally vivid constitution had enabled him to throw off the mercury and iodine as he took them, they not remaining in the circulating blood, but helping to establish the visceral irritation which had interrupted the nutrition of the body in the manner I have explained.

§ 5. DISORDERS OF THE LIVER AND DUODENUM.

I have been desirous to exhibit in an isolated form the phenomena which are attached to the pure irritation of immediate primary organs of nutrition, the stomach and small bowels. It must be remarked, however, that cases wherein those organs exclusively exhibit a morbid condition are rare. By far the greater number of instances of dyspepsia involve the great accessory organ of digestion —*the liver*, in degrees that vary from simple irregularity of function to enlargement and hardening. Irritation of the *duodenum* (the short bowel, which is between the stomach and small guts), where the gall ducts empty the bile, to join the chyme as it flows from the stomach, is also a not unfrequent element of dyspepsia, and is always more or less connected with chronic diseased action in the liver. Still, nervous or mucous disorder of the stomach itself, always precedes the malady of either and both of these organs; and the consideration of it, therefore, naturally antecedes that of the duodenum and liver. These last, moreover, exhibit symptoms that are independent of the general symptoms of dyspepsia—symptoms which, added to those of stomach irritation, give origin to the state called *biliousness:* a term, be it said in passing, used alike when there is too little and when there is too much bile flowing; of which more anon.

The same nerves of the great ganglionic net-work, situated at the pit of the stomach, which supply the latter, also by branches supply the liver; and the same mucous membrane which lines the stomach extends to line the duodenum, and thence, through the common gall duct, to line every one of the numberless ramifications of it in the liver, terminating, after infinite subdivisions, in the minutest points, where the great work of biliary secretion goes on. In the liver, therefore, as in the stomach, we have to view two kinds of derangements—one dependent on disordered nervous supply, the other on fixed mucous irritation. As regards the *duodenum*, we have no means of ascertaining its nervous disorder as distinguished from its mucous inflammation, which is one of the most formidable and intractable of digestive diseases. Still, as *duodenitis*—as chronic inflammation of the duodenum is called—never exists apart from disorder of the liver, I shall speak of both at once, only stating, as I proeeed, what additional signs mark its co-existence with diseased liver; which *may* exist without duodenitis.

Disordered supply of ganglionic nervous energy to the secreting capillaries of the liver, is caused by sympathy with some other organ, and almost entirely by the brain and stomach. Any mental shock on the brain is reverberated on the great digestive centre of nerves, and tells immediately on the stomach, and very frequently on the liver also. In fact, some passions are said to act more exclusively on the latter organ, such as vexed *amour propre*, and jealousy. The nervous shock thus propagated deranges the secretory action of the blood-vessels of the liver either to diminish, to increase, or to vitiate the bile. Thus we see powerful mental emotions sometimes arresting the flow of bile into the intestines, and causing its retention and appearance in the skin in the shape of jaundice; or in other cases, the shock causes augmented action, as evidenced by bilious vomiting, or diarrhœa, generally of a diseased character. These are severe cases; but that shocks of a minor degree produce biliary disorder of a minor degree is certain. That disorder claims the epithet *bilious;* and it behoves the physician to ascertain whether the fact of suspended or augmented flow of bile is attachable to the term.

Sympathy with a dyspeptic stomach is another originator of nervous derangement of the liver. It may be presumed, and facts show it, that, at all times during dyspeptic irritation, there is a stream of morbid sympathy flowing thence towards the liver, and maintaining there more or less morbid action. But it is equally demonstrable that when temporary exasperation of the dyspepsia takes place, an acute attack of nervous biliousness also supervenes; and this more especially in nervous dyspepsia. The process consists generally in first diminishing, and subsequently augmenting the secretion of bile : the reason for which is plain, from what was said in the first part of this work on the subject of extension of disease.

A similar, though a more permanent irritation, is established when the mucous disorder of the stomach produces mucous disorder of the liver. This occurs more especially when the right or lower end of the stomach is the seat of disease ; and as, in extending to the membrane which lines the gall ducts, it has to pass by that which lines the duodenum, the *mucous* dyspepsia is that which usually originates *inflammation of the duodenum.*

Whether, therefore, there be nervous or mucous biliary disorder, the nerves or lining membrane of the stomach are first of all affected. This involves the question of the *modus operandi* of medicines, called *antibilious.* As I have said before (page 17), no internal remedies can reach the liver save through the stomach ; to rouse the former to action you must rouse the latter ; you strike at the liver through the stomach. So that whilst you think how cleverly you are urging the liver with calomel, you should also remember that the spear is being driven into the stomach, which may be, nay, certainly is, irritated before the organ you desire to act upon. *Antibilious* is thus synonymous with *irritating the stomach*; and those vulgar dietetic remedies against "bile" (a wild sort of term, used to express all and everything concerning the liver), viz., bacon and brandy and water, are the best remedies for perpetuating dyspepsia, at the same that, by causing a temporary stimulation of the stomach, they are esteemed and taken by the populace, not only as antibilious, but antidyspeptic! At least it would be well to ascertain first of all, in what the *biliousness* consists. Is there too much or too little bile? for the term is applied to both facts, and although bacon, &c., may rouse a torpid liver, is it also pretended that it will calm an over-active one? The folly of all this lies in the treatment of a world *biliousness*, instead of looking into the *state* of the biliary organ. One man with a yellow skin, and another with a florid clear skin, complain of a bitter mouth and *biliousness*, and would treat themselves, or be treated in like manner; the fact being, meanwhile, that their livers are in diametrically opposite conditions, the former being too torpid, the latter too active. There is a great deal of pig-headedness abroad on the score of this "breakfast bacon;" and if the reader beheld the tenacity with which patients cling to their bacon, he would acknowledge the necessity for these animadverting remarks.

Biliousness, then, signifies disordered action of the liver of a nervous or mucous character; and that action may cause deficient, excessive, or vitiated bile. The signs of *deficient bile* are, yellowness of the white of the eye, and of the skin generally, if the stoppage be great; yellow, bitter tongue, thick saliva, acid breath, and sour risings, deficient and highly-coloured urine; deficient and pale evacuations from the bowels, dry, obstinate, itchy skin, inappetence, dull headache, somnolence, slow, labouring pulse. The signs of *excessive activity of the liver* are, flushing of the face, especially of the nose and chin, some bitterness of mouth, clean red tongue, with red pimples along the sides, sore, or relaxed throat, hot breath, bitter risings, copious urine, especially at night, bright yellow evacuations, of a very small taper-like calibre, piles, dry skin, exceedingly sensitive to changes of weather, great appetite, but with occasional fits of nausea; acute nervous headache, irritability, restlessness, rapid pulse. The signs of *vitiated bile* being secreted are those of the last-named condition, except that the appetite is indifferent, the urine rather high-coloured, the intestinal evacuations dark, or greenish, and burning as they pass; there is more or less spasm in the region of the stomach, and sometimes piles, at others only itching of the anus. It is in this state that the bile sometimes is so thick, or so acrid, as to produce violent spasm of the gall ducts in its passage; and that the concretions of bile, called gall stones, are formed, and cause the same spasmodic state in their passage into the duodenum.

Irritative action is the basis of the two latter of these states, and congestion of the former. When the liver cannot secrete bile, it is because it is oppressed by a load of blood throughout its whole substance; it is in a state of feebleness from oppression, and requires a diversion to be made in its favour. The diversion which nature makes is most commonly by sweat, rarely by the bowels. When the liver acts too vehemently, or secretes bad matter, it is because the minute extremities of the gall tubes, and, in the case of excessive action, the larger tubes also, are in a state of inflammatory irritation, the rest of the liver being in its usual state. Here the aim is to lower, to reduce redundant action, to calm the function of the liver. From all which it will be perceived, that it is of importance to determine what is meant by *biliousness*, and that one remedy will not do for all kinds of it.

A disordered liver generally begins with excessive and ends in deficient action. The repeated attractions of blood towards its secretory tubes, caused by stimulating food, the passions, &c., each time more and more enfeeble the self-restorative power of the organ, whilst as, each time more and more blood accumulates in it, in consequence of this waning power, the whole mass becomes at length congested, and the passing attacks of biliousness become a permanent state of jaundice. I need not remark how much the usual treatment of those attacks by mercury must tend to hasten the feebleness alluded to, by the over-stimulation and the exhaustion of the capillaries of the part; until at last, when they most need to be stimulated, the medicine to which they have been so long accustomed fails to excite, and leaves them helpless. In this helpless state it is that so many livers come to the water-treatment.

Congestion once established, it goes on to *swollen liver*, a condition which I would compare with that of a sponge expanded with water: there is no actual addition of substance, but only an expansion of the natural cellular substance of the organs. This state is curable. But if it persist for a long time, and be still irritated by attempts to *force* it to secrete bile, the accumulated blood in it begins to deposit additional substance; sometimes like that of the liver, at others of a yellow, tallow-like appearance, and hard, or a mixture of both. This is *enlarged liver:* it is not curable, and can only be prevented from extending further. Many of the symptoms it gives rise to may be palliated, and the portion of it which is only *swollen* may be reduced by the water-treatment; but the changed structure can in no way be removed. This applies still more to the last stage of liver disease, *hardened liver*, which is a wasting of the cellular tissue of the organ, and an encroachment of the morbid structure already mentioned; so that all its secretory parts are annihilated, and it remains a hard, inactive mass, dangling under the right ribs, and acting only the part of a foreign body, irritating the rest of the body directly by its presence, and indirectly by the non-fulfilment of its important function. The signs of each of these conditions are sufficiently decided; but the enunciation of them here would be too long for the aims of this work. But such as I have described it, is the progress of disease of the liver. At first an attack of biliousness, connected, probably, with nervous dyspepsia; then the mucous membrane becomes involved by repeated attacks of that kind, and by repeated treatments; next the mucous attacks at length involve the cellular tissue, and congestion is established, which in process of time and of further irritation, passes into swollen, thence into enlarged, and finally into hardened liver.

Let the reader, meantime, picture dyspepsia, in its various degrees of intensity, accompanying these phases of biliary disorder, and aggravated, *pari passu*, by the irrational plan of stimulation generally pursued, and he will find abundant cause for the haggard looks, the failing strength, the irritable temper, or indifferent stupor, and the annihilation of all enjoyment, which mark the biliary dyspeptic. And the end of all this? In some, the stoppage of the biliary secretion causes the elements of the bile to be retained in the circulating blood, and to be presented to tissues to which it is alien, and therefore irritating, and among others to the brain: add to which, that the long existence of irritation in the liver had already maintained a sympathetic one in the brain, so that this last becomes at length the seat of irregular circulation, and *apoplexy* closes the career of many a bilious patient. Or, the passage of the blood from the lower limbs and the viscera of the abdomen through the liver being impeded, the blood-vessels of those parts become gorged by the gravitation of their contents; and, to relieve themselves, pour out their watery parts, and thus *dropsy of the abdomen and legs* takes other bilious persons off. Or again, the retention of the elements of the bile in the circulation, entailing the office of their elimination on some other organ, the *kidneys* in this manner become diseased, refuse their office, and thus *dropsy of the head, chest*—universal dropsy, in short—kills the patient by apoplexy or suffocation. Or finally, the want of bile, added to the wretched state of the stomach which attends it, so deteriorates the blood-making process, that the body sinks from mere atrophy, the elements waste it, and it goes out as a candle deprived of air.

I have been speaking of liver disease as it originates from irritations applied to it through the medium of the stomach. But it may be well to mention another mode in which it may originate. When, from *organic disease of the heart*, the passage of the mass of blood from the liver upwards through it is impeded, that blood returns upon the liver, is retained there, and produces all the evils that congestion or irritation of its tissue entails. This, of course, is a case quite out of the reach of any remedial measures.

There is another condition in which the liver fails to secrete bile, which has no immediate reference to irritation of the organ—I allude to the state of *anæmia*, or bloodlessness. When, from any cause, the body has been drained of its nutritive liquid, and all the functions languish in consequence, the liver shares, of course, in the deficiency: deficient blood is here the cause of deficient bile. How, then, can urging of the liver with mercurials be justified in such a case?* Yet it is very commonly done, to the further draining of the body and wasting of the patient, the want of bile increasing with the means taken to produce it. The folly and superfluousness of the proceeding is the more flagrant here, as there is not one symptom of biliousness, save the non-appearance of bile in the evacuations.

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* A medical acquaintance, in a state of exhaustion, complained of this to me on one occasion, and told me he could not get bile, take blue pill as he would. I referred him to his bloodless skin and thready pulse, and asked where the blood was whence the bile was to come? This had never occurred to him, and astonished him much. However, he came to agree with me that digested mutton-chops were, in his case, much more *antibilious* than the blue mercurial.

Much of what has been said concerning the liver, applies to the *chronic inflammation of the duodenum.* There are the same derangements of the biliary secretion, at first excessive, afterwards deficient, but always more or less vitiated—the same sympathetic pains of the head and right shoulder, the same disorders about the lower bowel, the irritability or indifference of mind, &c., &c., according to the phase of the irritation which obtains in the different degrees of liver disease. In fact, the *duodenum* is at once the exit from the stomach and the entrance to the liver, whose great duct, down which all the bile pours, empties itself into it. Irritation applied to the orifice of that duct is like the same applied to the throat: irritate the throat with a feather, and you sicken the stomach; inflame the mouth of the gall-duct at the duodenum, and you excite the liver on its minutest secreting extremities. There are a few symptoms, however, which mark this disease as distinguished from liver disease alone. 1. Some time—generally about two hours and a half—after a meal there is nausea or actual vomiting: this is due to the passage of the first chyme through the inflamed duodenum into the small bowels; being the exit from the stomach, the excitement produced in the morbid part by this passage, throws the stomach into a state of convulsive action. 2. Again, the mental irritation from *duodenitis*, before it has caused biliary congestion, is extreme and incessant: the fiend of quarrelsomeness seems to have entered the patient, and taken possession of him: his mind is one continual sore. The first years of NAPOLEON's residence at St. Helena, gave abundant evidence of this: he found insult and outrage in everything—

"A bust denied, a book refused, could break
The sleep of him who kept the world awake."

And all this time the slow process of duodenal irritation was laying the foundation of those organic changes in itself, the stomach, and the liver, that were to lay him low—changes which, I hesitate not to say, after a perusal of the details of his treatment from beginning to end, were hastened, and all chance of avoiding them removed, by that treatment. 3. At all stages of *duodenitis* there is more or less tenderness over the region of the organ, that is, a little to the right of and below the pit of the stomach, is, a little to the right of and below the pit of the stomach, and deep down upon the spine: and as the disease proceeds, a distinct feeling of a tumour is added to the tenderness, bespeaking the gorging of the whole of this short bowel with blood, or even its organic change. 4. The form of the fæces is peculiar, the cylinder being very narrow and flattened, a peculiarity which varies with the decrease or exasperation of the duodenal irritation, as confirmed by the subsidence or increase of the other symptoms. It would seem as if the disease in the upper bowel caused sympathetic spasm, or tumefaction of the lower one. 5. The *duodenal cough* is very striking—especially to the drum of the ear, on which it rings hard, sharp, shrill, yet deep. That it is duodenal may be readily proved by pressing on the bowel in question, when the cough will be instantly produced.

Strange, that this frequent, formidable, intractable disease, should pass unnoticed by so many English medical authors. Yet so it is. You will seek in vain for it in our standard works on Practice of Physic. The fact is, that it is constantly spoken of and treated as liver disease: whereas, I would rather undertake a dozen cases of the latter, than one of *duodenitis*, so practical do I hold the difference between them to be. It is possible, by regulating the quantity of diet, &c., to afford the liver some rest: but for the duodenum there is no cessation of irritation: chyme, mostly of a morbid kind, is passing through it eighteen hours out of the twenty-four hours: its own malady excites the liver to pour out bile, frequently of an acrid kind, into its diseased cavity: the stomach, extended with food or air, or moving in the act of digestion, draws it mechanically in one direction: the vermicular motion of the small bowels draws it another; and it lies close down upon the hard, unyielding spine, with a weight of superincumbent viscera above it; so that very little opportunity of self-restoration is given to it; and it seems altogether unnecessary to decrease its chances of this by passing purgatives of all kinds over its sore and irritable surface, as is commonly done. But, as has been observed, the disease was scarcely known to the English medical world until a very few years ago. The French recognized it as an important malady twenty years since: and I was the first to give a detailed account of this and other chronic maladies of the digestive surface, as delivered from the lips of the great Broussais.* I believe that very many persons who treat themselves for disordered liver labour under this more dangerous malady; I have found several who announced themselves as "liver patients," but proved to have chronic *duodenitis.*

Is chronic inflammation of the duodenum curable? The answer is regulated as in disease of the liver: irritation, inflammation, congestion, and tumefaction of the organ are curable; not so the enlargement and hardening of it. The two first stages are coincident with ordinary biliousness, with excessive bile; the two next with the vitiation and deficiency of bile, though not invariably; and the last, with utter stoppage of the bile, the waxy lip, the bloodless, dropsical skin, and other signs of lapsing vitality and arrested nutrition. The fatal terminations resemble those of liver disease; in fact, *duodenitis* kills by disorganizing the liver.

The TREATMENT OF LIVER DISEASE and DUODENITIS varies with the stages. Common biliousness, with bitter rising, &c., is best treated by hot fomentations over the pit of the stomach and liver, continued for an hour every night; by the long sitz bath; wet sheet rubbing; and the compress over the regions just named, changed every two or three hours. The quantity of water for drinking should not be large, as much water rather excites the liver; only a small quantity at a time should be taken. The food should be chiefly farinaceous, and sparingly given; it should be quite free from any fatty material; milk should be avoided, as the clot it makes in a bilious stomach is exceedingly solid; the exercise should be moderate, and the mind should avoid exciting subjects and objects. The aim of all this is to reduce excessive action, a state bordering on the acute, and for the most part connected with a highly nervous disorder of the stomach. The fomentations do it by drawing blood to the exterior opposite to the irritated parts. The sitz bath acts by deriving blood from the upper to the lower organs of the abdomen. The wet-sheet rubbing soothes, by taking the caloric from the nerves of the skin, which is very irritable in the bilious state; and by doing so, tends to quiet the excitement of the brain, also attendant on that state. The frequently changed compress produces a frequent revulsion of blood to the surface, diminishing the febrile heat within. The nervous condition of the digestive organs will not allow of large draughts of water, both because their bulk is irritating, and because they especially excite the liver. Animal food being too stimulating, and succulent vegetables being generative of strong bile, the farinaceous are used as least exciting, both from the small quantity of nutriment they contain, and their slight action in the contrary direction. The sympathy between the brain and liver is one of the strongest in the body, and, as has been said, strong passion is a very common cause of a bilious attack. Hence, in chronic biliousness, the activity of the brain, as shown in great amount of exercise, and in the consideration of exciting subjects, should be avoided.

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* See my translation, with notes, of his "Lectures on General Pathology and Therapeutics," in the "London Medical and Surgical Journal," 1835-36, of which I was at that time co-editor.

Such is the *style* of water-treatment in ordinary cases of chronic biliousness, where the irritation is generally of a nervous character, but sometimes also of the more acute mucous kind, or where duodenal irritation prevails. Of course, variations of management occur with slightly varying indications; such as great headache, when foot-baths are necessary, &c. With regard to this last-named remedy, I must state that I have not found it of good effect in the general run of these cases, except in the instance just mentioned; it appears to augment the tendency to headache, to enfeeble the head, in fact; the hot fomentations answer better, a tumbler of water being sipped whilst they are going on. Scrofulous and languid temperaments require modification of treatment also; but such are rarely seen to suffer under this sort of liver complaint. The great point is to rest the nerves of animal and organic life, and *gently* to aid them, by the appliances of the water-treatment.

But it is otherwise when the liver has reached the point of torpid congestion, of *obstructed* function. The object, then, is to rouse it, on the one hand, and to effect a powerful diversion in its favour, on the other; taking care, meanwhile, that neither in doing the former, nor in rousing other organs in the latter, *febrile* excitement be allowed to predominate. Excitement of a *nervous* kind always attends more or less the successful treatment of this case, for it is through the instrumentality of the nervous system that the efforts at self-restoration are made; and this nervous excitement produces phenomena of various kinds. Sometimes when, as a result of the water-treatment, the obstructed liver begins to be roused to action, the patient experiences dyspeptic symptoms, such as he had not hitherto felt: there is heartburn, swelling after eating, extreme flatulence, even tenderness of the pit of the stomach—all indications that the organic nerves of the digestive apparatus are labouring under unusual excitement, and that the brain too, is roused to a recognition of what is going on. At other times this last-named organ, the brain, becomes the seat of such phenomena of excitation, and the patient, whose torpid liver had hitherto stupified his brain, and rendered him nearly insensible to everything, finds himself nervous, almost hysterically sensitive to every wind of circumstance. I shall speak of this more at length in the succeeding part; it is alluded to here in order to explain the difficulties which attend the treatment of congested liver, and the necessity now and then of varying it, and sometimes suspending it for a period.

Another consideration attaching to the treatment of congested liver, is the presence or absence of duodenal irritation, and, if present, of its character and duration. If coeval with, or antecedent to, the liver derangement, the same treatment may be followed for both. If it is of more recent commencement (and sometimes *duodenitis* succeeds, instead of preceding liver disease), and therefore, in the active inflammatory stage, modifications of the plan against the liver becomes necessary.

A third consideration is the condition of the brain as regards apoplectic fullness; and this is a very disagreeable complication to deal with, retarding, as it does, the active treatment necessary for the reduction of biliary congestion.

Congestion is the stage of liver complaint which is by far the most frequently presented for treatment by the water cure, the patients having passed through the previous stages, and been hastened towards this by the medicinal means I have already mentioned, before coming to Malvern. The treatment commences well with a day or two of wet-sheet rubbing, in order to excite and prepare the torpid skin. After this, if there be duodenal irritation of recent origin, it is well to pack in the wet-sheet each morning, and to foment with hot water each night for a short time, until the tenderness over that organ, and the other signs of its active disorder, be subdued. From the commencement, however, there should be excitation of the skin with the sheet-bath three or four times a day; and the abdominal compress should be worn, and frequently changed, day and night. Water should also be copiously drunk, beginning with six or seven, and getting on to ten or twelve tumblers daily. In very old cases, much more than this is required, and a good part of it should be taken before breakfast. In the majority of cases, this preparation with wet-sheet packing is not requisite for more than a few days, in order to carry off some trifling feverishness of action, the result, mostly, of the late irritating medication and diet to which the patient has been subjected; and the temporary relief it affords is great. But to continue it would be injudicious, as it is a lowering, rather than a rousing process, reducing the activity of the nervous and circulating systems. Sweating is the *natural* relief of congested liver; and as the principle of the water-treatment is to imitate and aid nature, that process of the treatment should be employed so soon as all considerations regarding the duodenum and head are removed. For this congestion and torpor of the liver is very often accompanied by tendency to, if not actual apoplectic fullness of the brain; in which case, also, preparation for the sweating must be made by the wet sheet, fomentations, low diet, and only a sparing quantity of water to drink. The pulse and other signs evincing a safe state of the head, we proceed to sweat the patient every day, or every second day, according to the powers of the brain and circulation to bear it; it must not be allowed to excite either to excess; and it is the physician's part to watch this well. Giddiness and tension of head, and palpitation of heart require temporary suspension of the sweating and water-drinking. Slight accessions of feverishness may be produced by the treatment, and these are to be quelled by a wet sheet or two, and by fomentations. All this time the sitz bath should be taken in its derivative character, for twenty, thirty, or forty minutes, once or twice a day. Passing headache is to be met with foot baths, &c., &c. Thus the treatment goes on; and in the course of a period, varying in different individuals, the douche is added, and gradually carried to the extent of six or eight minutes. The abdominal compress is worn day and night; a considerable quantity of dry friction with brushes, &c., should be used over the limbs and abdomen after each process.

The *diet* in hepatic congestion should, as a general rule, be devoid of fatty and spicy materials, because, although such things stimulate the liver, the object of *cure* is to make it act without such temporary expedients of stimulation. A little more latitude in taking of vegetable matters may be allowed; cauliflower, young peas, and Jerusalem artichoke being admitted, in addition to the farinaceæ. But as in the former phase of liver disease, *bulk* must be avoided; therefore, if some farinaceous pudding be taken after meat, both must be eaten sparingly. For the rest, paste in any shape, fried meats or vegetables, duck, goose, or twice-cooked food, are inadmissible. Hot liquid and milk are bad: still upon the whole, the rules of diet are not exceedingly stringent as to quantity in this malady, and therefore the rule as to *exercise* is, to walk as much as possible, short of feeling fatigue at the pit of the stomach. Even violent exertion is good, the aim being to relieve the swollen torpor of an internal solid organ, and this being assisted much by expediting the whole circulation of the body.

Indeed, such is the aim of the entire treatment. The sweating both causes a diversion in favour of the liver, and quickens the circulation through it. The douche does the like, vehemently rousing the activity of the heart, and exciting the skin. The long sitz bath draws blood down from the upper organs of digestion, and necessitates a long and brisk walk after it: the dry frictions are artificial exercise, as regards the circulation. Last, not least, come the large doses of water, the effect of which is to hasten those changes of the chemistry, which shall both quicken the circulation of the blood and change its mass, rendering it more fit for the secretion of healthy digestive liquids.

The crisis of the first phase of chronic hepatic disorder, is most commonly bilious vomiting or diarrhœa, or both; sometimes slight and long-continued, at others sudden and great. Glutinous and ill-smelling sweatings at night not unfrequently accompany this signal of relief in the liver. Of the swollen liver, the common crisis is of boils, occasionally over the region of the liver itself; gentle but continued purgation of the bowels attending them. But both may go off with very large fæcal evacuations only, diseased in character at first, but gradually improving; not at all loose in consistence, but small in calibre at first, and gradually augmenting in cylindrical volume.

The palliation—for cure is out of the question—of the *enlarged* and *hardened* liver consists in artificial sweating, repeated as frequently as the head will allow, a great amount of dry friction of the whole body, and copious water-drinking. It is wonderful how much the sweating relieves for a time. Under its influence, I have seen a hard and contracted liver afford signs of some slight secretion in the fæcal matter, which the same sweating very often causes the bowels to secrete and excrete. This retards the certainly fatal termination of this form of organic liver disease, and keeps off some harassing symptoms. Beyond this, it is impossible to proceed, whatever enthusiastic writers on the water-cure may assert.

CASE VI.—NERVOUS DISORDER OF THE LIVER.

A middle-aged gentleman, who, fifteen years before, had been subjected to two severe courses of mercury, for a syphilitic affection, had, since that time, been a prey to a train of bilious symptoms, generally exasperated once in two or three weeks into the form of intense headache, which prostrated him for two or three days. The ordinary signs changed frequently in degree, and now and then left him altogether for twelve or eighteen hours, or, at least, were so slight, comparatively, as not to be complained of. Great appetite, especially for such improper things as the burnt part of meat, fat, &c., considerable thirst, clear, fiery-red tongue, bitter taste, foul breath, sore-throat, heart-burn, acid and bitter risings, tenderness of the pit of the stomach, irregular bowels, varying urine, dry hot skin, especially of the palms of the hands, florid complexion, red nose, emaciation, sleeplessness, and great irritability of temper—these left no doubt of the existence of *chronic nervous irritation of the liver.* The remission of more or fewer of the symptoms, and the exaggeration of them all, from time to time, in the intense headache, which itself terminated in bilious vomiting, came in confirmation of the nervous character of the malady. Moreover, as is usually the case, the signs of dyspepsia attended; that form of dyspepsia which is so frequent a result of mercurial medicines. He had had these disagreeables to some extent for fifteen years, but for the last four years they had become so intense, as to disable him from business, from which he had been, accordingly, obliged to withdraw.

Nightly fomentations of the abdomen with hot water, wet-sheet rubbings twice-a-day, a sitz bath of half an hour once a day, the use of the compress, frequently changed, and about six tumblers of water daily, constituted the active treatment for nearly three weeks. The food was confined to the farinaceæ and bread, the latter being eaten with very little butter. Exercise was limited to half an hour three times a day. The effect of this became very evident in the paling and shrinking of the face, the reduction of the sore throat, the diminution of appetite and thirst, and the improvement of the sleep and temper—the latter not much, however. Besides which, no violent headache had supervened; and the patient, though feeling himself weaker, felt himself quieter. The fomentations were continued, the cold shallow bath in the morning was substituted for the rubbing-sheet, and in place of anything else, two long sitz baths were taken. I advised him to try to take more water, and improved the diet by the addition of some meat at dinner every second day. Exercise was augmented. By these means, the bowels were made to act more regularly, the bile always appearing in them, instead of capriciously, as heretofore. Desirous to bring all the anti-irritative means of the water-treatment to play, I tried the wet-sheet packing, but it produced one of the violent headaches, followed by copious vomiting of bile, which, though it left the patient better, so disheartened him, that I did not again give it, but tried the towel packing in front. This suited very well, and assisted the fomentations in reducing the nervous irritation of the liver. With these two remedies for sedatives, with the sitz baths for derivatives, the diet regulated so as to oppress the stomach and excite the liver as little as possible, the water-drinking to cool the stomach and dilute its contents, the compress to counteract and soothe the irritated nerves within, and the exercise sufficient to waste the food and prevent repletion without straining the nervous system; this patient, in the course of four months, recovered a state of health to which he had been a stranger for nearly fifteen years. During the treatment, he had only one headache, induced by the wet-sheet packing: and since he left Malvern, now thirteen months, he has only experienced slight headache on two occasions, once after four glasses of wine (probably of a bad kind), and another time in a hot room. Whilst here, under active treatment, he had several times, for several days together, risings of mouthfuls of bile, and also days of turbid urine loaded with salts: but, except these, he testified no critical action, and the disease seemed to disappear by a simple alteration of the nervous influence communicated to the liver.

This is an illustration of the ordinary "biliousness," for which such amazing quantities of mercurials, tonics, alkalis, greasy food, &c., are administered for successive years, without the smallest amelioration, but with the greatest deterioration, of the symptoms. Gradually, the redness of the face grows more dim and dingy, becomes mixed with yellow, the tongue endues a coat, fixed pain in the right side supervenes, the appetite fails, &c., all signifying that the liver is more deeply implicated, and that mucous disorder, congestion, swelling of its substance, have taken place. Here is a case in exemplification of this.

Case VII.—Congested and Swollen Liver.

A lady, fifty-five years of age, of a highly nervous anxious mind and bilious constitution, became sufficiently disordered in her digestive powers to need medical advice, about three years ago. She was treated *secundum artem* for bilious dyspepsia, but went from bad to worse. From being a plump, ruddy-faced person, she became puffy and deeply yellow. A swelling under the right ribs was detected by the medical attendant; appetite was gone; nausea incessant; bowels utterly sealed, save under the action of a strong aperient; urine exceedingly scanty, and actually thickened with a load of salts, urea, and bile, in colour and consistence being like a large quantity of dark clay, suspended in a small quantity of water: incessant fever, &c. The best London and provincial advice only suggested fresh mercurials, which were introduced profusely both by the stomach and skin, with the only effect of augmenting the tumefaction of the liver, arresting the process of digestion, and prostrating the animal powers.

When she came to Malvern, she was under Mr. Wilson's care, and continued so for nearly two months; during which time, as I was told, the wet-sheet packing was the principal remedy employed. She did not flourish under it; on the contrary, it produced violent disorder of the nervous and circulating, as well as the digestive systems, evidenced by sleeplessness, terrors, faintings, vehement flushings and palpitations, and incessant nausea. After this, I have constantly observed, in tumefied and obstructed liver, a very small amount of wet-sheeting is tolerable, only sufficient to reduce some feverish irritation, which sometimes exists at the outset of the treatment, when patients come with the effects of stimulating medicines and diet fresh upon them. This overcome, further wet-sheeting is harmful. The patient was in the disorder I have stated when she placed herself under my care, at the desire of her son, who is a physician; and I accordingly undertook the case myself. Viewing it at once as one of obstructed and oppressed function, I saw the necessity of abandoning the lowering process of the wet sheet, and adopting that which would cause a transfer of irritation, and thus bring about a diversion in favour of the oppressed liver. This was to be effected by the sweating process, which was practised in her case with the spirit-lamp, the long imprisonment in blankets rendering her nervous. Further, as there was a good deal of duodenal irritation, and as, after the rousing process of sweating, and the unavoidable fatigues of digestion, noise, &c., during the day, some nervous congestion took place in the ganglions about the stomach (the invariable result of animal and organic fatigue), I directed a short fomentation with hot water to be applied every night over that region. After the sweating she was rubbed with dripping towels. She wore the compress constantly. She drank freely of water, but in small quantities at once, as flatulence and spasm were easily excited. Her food was farinaceous for the first few weeks, very carefully given, and as carefully and gradually improved to animal liquid, and then solid diet: on this score, the utmost nicety was required. Last, not least, the recumbent posture in bed was strictly enjoined.

Had this lady not been previously exhausted, and rendered exceedingly nervous by the medicinal treatment and the wet-sheeting she had undergone, I should have hesitated to enjoin perfect inaction in a case of obstructed function. As it was, the smallest exertion of the brain sent additional irritation and afflux of blood to the digestive organs; so much so, that, as I have said, even the unavoidable excitation of that organ by sweating, the trifling noises about her, and some talking, caused such afflux towards the close of each day, and demanded fomentation. Rest of the brain and spinal cord, therefore, withdrew a source of irritation from the morbid organs; then the sweating transferred irritation to the universal skin. The compress did the same continuously over the digestive organs. The nightly fomentations, by dispersing the daily congestion at the pit of the stomach, allowed the brain to go to sleep. The water cooled and diluted the contents of the stomach, assisting also the action of the bowels and of the kidneys. The food, from its mild and slightly nutritious character, gave the digestives but little to do. And thus, in every way, opportunity was given for the oppressed organs to recover their action.

This they gradually did, effecting for themselves, when thus placed in a favourable position, what all the mercurials had been unable to *force* them to do. By degrees, the urine altered in quality and quantity, until the first was perfect and the last great. By degrees, too, the fæcal evacuations augmented in cylindrical calibre, in quantity, and from perfect whiteness, became healthily coloured. Then, after some weeks, spontaneous sweating came on, and continued profusely each night for two or three weeks. And, as all this was going on, the knotty surface of the liver, and then its size (which reached to the right hip and the navel) diminished in proportion ; so that at the end of seven weeks, she was seated in the drawing-room, and three weeks afterwards was driving out daily. Meantime, also, her appetite and digestive powers had amazingly increased, and the meat she took once daily, and the farinaceous food she had in good quantity, were digested without the smallest inconvenience. From an early date of the sweating, too, the complexion and the eyes, which were actually of a mahogany colour, so charged was the skin with bile, had commenced to resume their respective white and ruddy colours. The sleep, with very few variations, was good, and the spirits excellent.

I have given the general treatment adopted, but it must not be supposed that no modification, or even suspension of it took place all this time. On the contrary, from time to time, the sweating was reduced to twice a week: and, on one occasion, altogether suspended for a fortnight: this was the period when the spontaneous perspirations were going on at night, and which were, in fact, critical. Nervous headaches appeared now and then, requiring the foot-bath; and the occasional dryness of the mouth demanded increased fomentation and water, and decreased animal food. But when the patient was enabled to go out daily, and to walk for a short time together, the tonic part of the water-treatment was applied more freely; she took a cold sitz bath for ten minutes twice a day, and the shallow bath on rising, and at bedtime; the sweating being reduced to twice a day. Under this *regime*, she gained strength and flesh, and at the end of three months from the time of her coming under my care, she was enabled to travel upwards of a hundred miles to the sea-coast, where she remained for three months longer, pursuing the same treatment as nearly as possible. At the present moment, it cannot be said that the liver is reduced to its natural limits, but it is gradually tending towards it; and in the meantime, the patient, whose case had been regarded by her previous medical attendants as necessarily fatal, is fully restored to the duties of her position, as the wife of a zealous clergyman, whose coadjutor she is in his offices to the poor of his parish, and as the mother of a large family.

An illustration of another form which obstructed liver takes is given in the following case:—

CASE VIII.—OBSTRUCTED LIVER.

After many years of service in the East and West Indies, the subject of this case, a military officer, returned to Europe, as many do, with inveterate dyspepsia, and a gorged liver. This last was exhibited in a mixed pallor and yellowness of the skin; eyes, the very blood-vessels of which were orange-coloured; lips that were in places of a dirty red; in others, resembling hard wax-candle. The limbs were shrunk, the abdomen enlarged. In the state of the bowels, feelings after eating, bitter taste, &c., the symptoms were those of ordinary biliousness. But the brain and nervous signs demanded more particular attention as they indicated pressure on the head. The sight was tormented with never-ceasing black spots, with occasional and momentary extinction, accompanied by giddiness. Hissing, clanging, and humming noises invaded the ears. In the skull itself, dull headache alternated with feelings of tightness; or, on the other hand, of bursting extension. Sleep frequently stole on him in the day, and was very deep at night, but molested by dreams. His will was almost extinguished; left to himself, he would never stir from his chair, and scarcely from his bed. His mind would have fallen into the same listless state, had not pain and temporary alarm at the giddiness roused it every now and then; although occasionally a fit of almost insane irritability would blaze up for a few hours. The pulse was generally hard, slow, and labouring, but would sometimes become quick, simultaneously with palpitation of the heart, and also with the irritation of temper. He had neuralgic pains in various parts of the body, but more especially in the right arm, down to the fingers' ends. Dull, heavy, but at times also acute pain occupied the region of the liver, which was somewhat, though not much, larger than natural; it was however, very hard to the feeling. There was enlargement of the duodenum, but very little tenderness on pressure. There were large hæmorrhoids, but they did not bleed.

All these symptoms showed two principal points of disease intimately connected—the liver and the brain. The latter, in fact, was threatened with apoplectic seizure, to be followed, probably, by paralysis. But, as in the body at large there was rather a deficiency than a redundancy of blood, it was plain that the flow towards the head was the result of the strong morbid sympathy with the liver, and that active lowering measures, to any great extent, were not indicated. From the occasionally acute pains of the liver and excited state of the mind, it also appeared that an interlude of active inflammation occurred in the chronically inflamed liver, corresponding with increased excitement of the circulation in the brain, and of the temper. The *tic* pains showed the continuous organic irritation of the spinal cord; and the piles were evidences of the obstruction offered by the congested liver to the free passage of blood from the contents of the abdomen to the heart.

In treating this case it was essential, in the first place, to remove all fear on the score of the head; and the means to do this were fortunately those adopted for the reduction of the tendency to the occasional acute inflammation in the liver and duodenum. They consisted in hot fomentations over the stomach and liver nightly, in wet-sheet packing every morning, a cold cloth being kept round the head the while, in the constant wearing and frequent changing of the compress, the reduction of diet to the least stimulating farinaceous materials, and the reduction of the time for sleeping. Very little water was given. In the course of a month these means had produced the desired result, as far as the softening of the pulse, the steadiness of head, the diminished sleepiness, and calmer temper went. Neither had there been any acute exasperation of the chronic disease of the liver and duodenum, which still, however, gave a dull pain. The kidneys, previously inactive, now acted largely; which was, no doubt, a diversion in favour of the brain. Altogether, in a few days beyond the first month, there existed no reason in the head symptoms against a more direct attack on the chronic congestion and obstruction, which constituted the main disorder. I therefore had the patient sweated daily, taking care to have a cold cloth round his head whilst it was going on. Every fourth day, packing in the wet sheet took the place of the sweating, in order to obviate any tendency towards the head which might have increased. With a cold cloth round the head, the patient also took two sitz baths daily for half an hour each. He was made to walk from ten to twelve miles daily. Animal food was given him every other day. The quantity of water he drank was apportioned in strict accordance with the condition of the head, and as fear for it diminished, the water was increased, until at length it reached from twelve to fifteen tumblers daily.

Such is an outline of the treatment adopted, and the reasons for it, which the result justified. The constant diversion from the liver towards the skin by the sweating; the constant action of the copious water-drinking on the liver, on the digestive canal generally, and on the kidneys; the daily withdrawal of blood from the upper organs of digestion towards the lower by the sitz baths; added to the stimulus given to the whole circulation by the great exercise, made this patient a new-looking man in the course of nearly four months from the commencement of the treatment. At that time a great deal of constitutional disturbance took place—sleeplessness, want of appetite, &c., all which was explained in a few days by the appearance of three boils in different parts of the right side of the body, which immediately took away the disturbance, and brought about a better state of the liver, as regarded pain. Still, the *tic* pains in various parts remained; and it was plain that a good deal of congestive disorder of the liver still prevailed. After suspending the greater part of the treatment, therefore, for ten days, until the boils had emptied, I recommended the sweating every other day, ordered the douche for two or three minutes daily; the two sitz baths, as before, the diet improved into daily animal food; the water and exercise as before. After three weeks of this brisk treatment, the piles began to bleed freely, and continued to do so, more or less, daily, for a fortnight. The effect on the *tic* pains was immediate; and all the black spots in the vision, the noises of head, &c., disappeared altogether. Thus, after having these two crises—boils and bleeding hæmorrhoids—the patient had only left behind some nervousness of stomach, which required care as to the quantity of food taken—care which he must be content to exercise for the remainder of his life, fortunate in having escaped apoplexy, with years, probably, of paralyzed helplessness. He can now walk with any one, does with very little sleep, has a clear head, a clean tongue, and a temper which is *not* bilious.

At this point I terminate the subject of the chronic diseases of the primary digestive organs. There are several diseases involving those organs which I do not mention, although I have had experience of their treatment by the hygienic water plan. Cases of *water-brash*, of *gastralgia*, or *tic of the stomach*, of *chronic heartburn*, have fallen under my notice, and been successfully treated. But they are only modifications of the conditions which constitute nervous and mucous dyspepsia: there is still the chronic irritation of the nervous or mucous texture, in the phases which produce respectively excessive secretion of mucus, nerve-pain, or spasm of stomach; and to treat of each at length would be book-making. As it is, I have depicted the chief traits of the chronic disorders of the organs in question with reference to the practical differences between them in the treatment; and under one or other of the heads thus formed, all minor dyspeptic disorders will range. Nevertheless, every one must expect to meet cases in which the symptoms of nervous and mucous indigestion, and of irritative and congestive liver disease, are so commingled as to defy arrangement, and to require the greatest discriminative and practical tact on the part of the physician. Into such cases it is impossible to enter in print, the signs by which they are distinguishable being far too numerous and minute for written enumeration. By having a clear idea of what constitutes nervous dyspepsia, as distinguished from mucous dyspepsia, and of irritative liver disease, as distinguished from congestive disorder, it becomes more easy to detect, in a mixed and complicated case, how far the elements of any of those states predominate, and to practise accordingly. For this reason, also, I have given cases in illustration of each, which are of a grave, and, one or two, almost desperate character; the differences are thus shown more prominently. Happily such serious instances of digestive disease are not of very ordinary occurrence; but inasmuch as the water treatment is able for the cure of such, it is certain, on the logical principle that the major includes the minor, that it is adapted for the cure of less serious, though perhaps as tedious cases—cases so tedious, indeed, that it would be a serious undertaking to write or read them. We therefore pass on.

CHAPTER II.

DISEASES OF THE SECONDARY NUTRITIVE ORGANS—DISEASES OF THE LUNGS AND HEART.

Rationale of the secondary process of nutrition in the chest—Diseases of the chest in which the water treatment is not curative; nervous cough; stomach cough—Chronic inflammation of the air tubes—Chronic bronchitis—Pulmonary consumption, incipient and confirmed—Palpitation of the heart—Organic disease of the heart.

As changes in the nutrition of parts are the basis of all diseased actions, it is physiologically correct to treat of them in the order of the organs which minister to nutrition. Natural as this plan is, I am not aware of any medical writer who has proceeded on it; probably (among British authors especially) because the act of nutrition has been but little thought of, and still less has the sympathy between that act at the extremity of the body, and the same at the great centre of the stomach, been sufficiently recognized. But it is my desire to exhibit this sympathy in the strongest light, and I cannot do so more effectually than by treating of diseases in the train which nutrition takes.

Nutrition begins at the stomach; there the first step is taken in the formation of the nutritive liquid—the blood; hence the name of "primary nutritive organs," which I have given to the stomach, and to the liver, its coadjutor. These cease where the absorption of the crude blood called chyle takes place—namely, at the small bowels. This chyle is carried up into the heart, and projected thence to the lungs, where its exposure to the atmosphere causes its transformation into fully elaborated blood, fit for the nutrition of every tissue of the body. In the *chest*, therefore, the *second* part of the process of nutrition takes place; and the organs which effect this deserve the epithet of "secondary nutritive," which I have given them.

The fact, which every day's experience of an observant physician must demonstrate, that the liability to disease, the tenacity of disease, and the curability of disease in any part of the body, depend upon the healthy or unhealthy state of the primary nutritive organs, has caused me to dwell at greater length on their maladies than it will be necessary to do on those of other organs. In fact, many diseases of which I shall have occasion to treat, are merely symptoms of some phase of disorder in the digestive apparatus, to which I shall have constantly to refer. Without this there is no sound view of disease; every patient of chronic disorder confirms my conviction of this.

Not many chronic lung diseases admit of *cure* by the water-treatment. Considerable *relief* is obtainable in cases of *asthma*, which is connected with a nervous condition of the stomach, and I have effected so much in three or four instances. But when mucous and nervous dyspepsia, with, as not unfrequently happens, disordered liver, are added to it, even relief is rare and small. Cases of this kind, therefore, as well as *any* cases where the patient is past the fiftieth year, or where the disease has existed more than five or six years, I consider unfit for treatment, and am in the habit of declining to treat; and I utterly disbelieve the tales that have been printed about the cure of old asthma by the water plan. *Pulmonary consumption* is, of course, incurable; but I shall offer a medical curiosity in the shape of a case where the water-treatment decidedly prolonged the life of the patient, as, indeed, I have seen it do in two other instances; besides that, by reducing the hectic, and quieting the nervous system, it smooths the path to the inevitable grave. *Senile bronchitis*, or *old man's cough*, is not a disease for water treatment. The *bronchitis* connected with organic disease of the heart I have somewhat alleviated, together with the irritability of the heart itself; but I apprehend this is rare. I will proceed, however, to speak of that which is within the scope of treatment.

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§ 1. NERVOUS COUGH.—STOMACH COUGH.

It has been already stated that a sympathy exists between the stomach and the lungs, by virtue both of their continuity of their mucous surface and the prevalence of the same system of nerves in each. This nervous connection renders the cause of *stomach cough* sufficiently obvious. Food irritating the digestive organ, the branches of the ganglionic nerves convey the morbid organic sensation to the windpipe, where an irritation is also excited, which puts the respiratory nerves and muscles into the convulsion of cough. Hence stomach cough is so frequent after a meal. It is not, however, requisite that food should enter the stomach; cough is often present when that organ is empty. This is more especially when the *duodenum* is the seat of chronic disease, and when, therefore, the liver is more or less irritated. I have already remarked on this cough (fol. 23). This is the sort of cough which spirit drinker's have, as well as they who use large quantities of cayenne and other hot condiments. Moreover, acid secretions in an empty stomach, or even flatulence, suffice to produce the sympathy with the lungs. Nay, the long fasting of the stomach renders it irritable, and thus induces cough. Hence the taking of water or food sometimes stops such cough. When, also, spirit drinkers have established a chronic irritation of the stomach, they, at first, are incessantly clearing the throat, save for a short time immediately after the renewed stimulus of the alcohol, which seems to disperse the irritation for the time, only to make it worse afterwards; for, in the end, this clearing of the throat augments into a regular cough, which also is subject to the same influence of alcohol, and its withdrawal.

But further: with the stomach in a state of irritation, *mental emotions* often play an extraordinary part in exciting a cough; but inasmuch as without such state of the stomach no cough is thus caused, it is plain that the mental act tells first upon that organ, and only mediately on the lungs. Surprise, anger, a painful recollection, will do this; and because they do so, the cough has been called "nervous," whereas it, in truth, acknowledges the same morbid origin as that called "stomach," and is to be treated in a similar way. We shall afterwards trace this so-called "nervous" cough up to the consummation of pulmonary consumption, the whole process and its mental excitant forming the too frequent tragedy of a broken spirit and broken heart.

It is not often that chonic nervous or stomach cough is presented for treatment at Malvern; patients have for the most part passed through it, and attained a more deep-seated and serious implication of the lungs with digestive disorder. I have had, however, three or four cases, and I select the worst of them to illustrate the treatment.

Case IX.—Stomach Cough.

In this case the patient, a gentleman twenty-nine years old, had indulged in the excessive use of hot condiments, cayenne, mustard, horse-radish, &c., and had, for some time past, laboured under nervous dyspepsia, with a slight degree of mucous inflammation as well—a state which, begetting sinking, gnawing, and craving in the stomach, led to still larger quantities of these dietetic stimulants. He was a man of vivid nervous system, and quick sensations (as, by the way, most people who desire highly stimulating food are). When, therefore, in the midst of this dyspeptic state, a severe mental shock came on him, a train of nervous symptoms presently appeared. One of these was cough, which, as it persisted for several months, notwithstanding a variety of treatment, began to be dreaded by himself and his friends as an indication of serious mischief in the lungs; and as other remedies had failed, water was tried, amid the jeers and warnings of those interested in him.

It was fortunate for this youth that the cough had appeared, for I found him on the high road to a most serious and inveterate dyspepsia, which his mode of diet was daily augmenting. The mucous membrane was inflamed in the stomach, and vividly at the back of the throat. The breath was foul, as it generally is in stomach cough, the tonsils partaking in the disorder. The cough was convulsive to the last degree, came in long and frequent paroxysms, and left his head gorged and aching with the retention of blood in it. There was not the slightest expectoration; although occasionally the mechanical violence of the cough would abrade the mucous surface of the organ of voice, and cause some blood to rise into the mouth. The stethoscope gave no signs of disease of the air tubes, or spongy substance of the lungs. In short, it was clearly and indubitably a stomach cough, which had been considerably exasperated by the irritating medicines, antimony, squills, &c., usually given for pure lung coughs, for which it had been mistaken.

The result of the treatment soon showed what it was. The patient was confined in his diet to farinaceous food, except a small quantity of chicken every other day; all condiments but salt and sugar were withdrawn, as well as all warm liquids; the stomach and bowels were fomented with hot water every night for an hour; he was packed in the wet sheet every morning for the same time, with a cold shallow bath after it; he wore the abdominal compress day and night; and he drank seven or eight tumblers of water daily. In ten days the cough was gone, and has never since re-appeared; although for want of time to give to the cure of his stomach, the gentleman still remains dyspeptic, but to a much less degree than formerly. For he learned when at Malvern that drug tonics do not always give tone, that stimulating food does not always nourish or strengthen, and that enough of plain nutriment and pure water carry the body farther in power than either. Therefore although he has not got rid of the old digestive sore, he has taken care not to increase it.

It is not very often that a cough is allowed to be a stomach one at all; and when it is, the medicinal applications generally allay it for the time, and exasperate its cause in the stomach in the long run. But so much is there in words, that "cough" being pronounced, "lungs" are also uttered; they are joined together, and not a thought is given to any other organ in the body. Yet for want of this thought, many a simple nervous cough has become an irremediable bronchial, or a fatal tubercular one. By dwelling too exclusively on the lungs, the lungs have become diseased. The passage towards these two conditions will be seen in the two following sections.

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§ 2. CHRONIC INFLAMMATION OF THE AIR-TUBES OF THE LUNGS.—BRONCHITIS.

Nervous, or stomach cough, would be too trivial a disorder to dwell upon, were it not a sign of morbid sympathy established between the digestive organs and the lungs. During a period which varies much according to individual tendencies, and some accidental circumstances, the sympathy is only exhibited periodically, the cough coming and going without any "taking cold," but the dyspepsia almost persisting. Almost imperceptibly the patient becomes more susceptible of cold than heretofore; night air, cold and damp air, change of clothing, &c., bring on cough, which is hard and dry at first, but afterwards goes off with expectoration, and is accompanied with more or fewer of the usual symptoms of taking cold. *At this point the nervous cough has ceased, and bronchial inflammatory cough has commenced; the mucous membrane of the air tubes is now implicated.* The attacks in question become more frequent and more prolonged; for not only does the extent of the bronchial mucous membrane involved increase, but, at each attack, the part last affected becomes more susceptible and less tractable; until at length the inflammatory action, creeping down the tubes, takes permanent possession of their lining membrane, and *chronic bronchitis* is established.

Whilst all this goes on, the digestive symptoms have increased, but are very commonly overlooked, as they were at the commencement, so intent is the treatment on eradicating the cough. Indeed, they are not only overlooked, but denied at the outset, simply because the patient can eat, sometimes voraciously, as in nervous indigestion; so coarse is the ordinary idea of that condition. Nevertheless, I maintain that bronchitis, in a chronic form, is *never* established without the aid and concurrence of the stomach, and other digestives. A man may take cold in the head; it may creep down into the chest, and thence disappear with expectoration—it is an every-day fact—but *not* if there be stomach disorder; it then becomes chronic, relaxes with the relaxation of the indigestion, and augments with its exasperation. The consequence of acting on a denial of this is, that the remedies employed against the cough feed its maintaining cause in the stomach, and are thus actually *increasing* the mischief for which they are given. It is thus that, after years of this worse than fruitless medication, the patient exhibits a complication of evils that is truly appalling. Not only has he the immediate ills of dyspepsia and bronchitis, but those arising directly from impeded digestion and respiration. The former will be found in their proper place. But the difficult breathing acts upon the head, by preventing the free return of blood *downwards* from it, whereby it becomes gorged; this is seen in the puffy, turgid, and sometimes purple faces of patients. In like manner, it gorges the liver, by impeding the return of blood *upwards* from the abdominal viscera through that organ, and thus adds to the dyspeptic torments. Nor is this all; this disorder of the liver leads to a general abdominal congestion of blood, which either induces *dropsy*, or the blood gravitating to one particular spot, *piles*, and *disease of the rectum* are generated—a complication very often seen in old bronchial and tubercular disorder of the lungs. Finally, the accumulation of mucus in the air passages prevents the free access of air to the black blood exposed on their surfaces, for the purpose of being changed into arterial, vermilion blood, fit for the healthy nutrition of the body. That change is imperfectly effected, the nutrition of the body is consequently imperfect also, and the functions of the organs languish. The *vis vitæ* is depressed; the re-active energy is diminished; and in this state the skin, unable to resist the agencies of cold, lets in the plagues of rheumatism, and other maladies dependent on alternations of temperature. Hence it is that old coughs and rheumatism so often are found in the same person. The mischief begins at the centre of nutrition, the stomach, and travels to its periphery in the skin and limbs.

The facility of expectoration varies with the exasperation, or otherwise, of the stomach irritation. This being roused by food, or, what is very common in this malady, by mental agitations, the cough immediately becomes more frequent and more dry, the breathing more difficult, and what expectorated matter there is more stringy and tenacious. Under these circumstances I have repeatedly tested the origin of these lung symptoms by applying fomentations to the *stomach* only, when they invariably dissipated, which they failed to do when the same remedy was applied over the ribs. Besides, one has only to observe the acid breath and eructations of persons with old *bronchitis*, to be assured of the gastric disorder that accompanies and varies it. I insist upon this fact, because it is the ordinary practice to place the digestive organs out of the question when lung disease is treated, and thus they suffer from the negligence of diet and the activity of the expectorants and other irritants given for the lungs; whereas, all the lungs require is withdrawal from exciting air, and reduction of the morbid sympathies transmitted to them from the stomach. There may be one exception to this rule, when the *bronchitis* is connected with organic disease of the heart; but even then, who ever saw organic disease of the heart without deranged digestion?—nay, this last invariably precedes it. Still, with diseased heart, the bronchitis would continue even were it possible (which it is not) to abolish the dypepsia; the heart would be maintaining cause enough.

Several cases of chronic bronchitis have left my care cured; but I prefer to give one, the symptoms of which were far worse than any of them, and which though, as will appear, considerably relieved, and, indeed, arrested in its fatal career, is not now, nor ever will be, totally cured, thanks to excessive medication.

CASE X.—CHRONIC BRONCHITIS—

Is one of a gentleman, forty-eight years of age, in very extensive business in the city of London, and who being highly esteemed by his fellow-citizens, has had much to do in civic transactions. Between the private and the public occupations, his stomach began to be disordered eight or nine years ago. He acted as is usual, took physic, worked on, broke down again, physic again, and so on. At length, dry stomach cough commenced—the morbid sympathy of the digestive ganglionic nerves had involved those of the windpipe. Cough medicines were given; more stomach disorder, more cough. He took cold—as dyspeptics readily do—acute bronchitis came on, was vigorously treated *secundum artem*, and subdued; but —and here is the point—having a bad stomach, it was only subdued into a chronic form. This went from bad to worse, notwithstanding a fearful quantity of doctoring, until the question arose whether he would not be utterly incapacitated for business. He was sent from home hither and thither; and at length came to Malvern—not with the intention of trying the water treatment, against which he had been specially warned. I saw him once, examined his state accurately, and told him how the whole mischief had begun, progressed, and would end, if not attacked at its source. That I should give him his history instead of receiving it, inspired him with confidence to brave the warnings of friends and physicians, and, after a brief time to arrange matters in London, he returned to Malvern for water-treatment.

It was high time. Without sleep at night, he passed the day in coughing, wheezing, suffocative breathing. He was the colour of whity-brown paper, emaciated, haggard, his shoulders raised and back rounded, with the efforts of laborious respiration. He had the ordinary signs of nervous indigestion, with flatulence of a most distressing kind; the appetite generally good, bowels confined, kidneys acting very scantily. Skin quite without moisture, except some cold damp when the respiration was more than usually bad. Intense headache from frequent coughing and impeded return of blood from the head. The stethoscope gave evidence of bronchial inflammation in every quarter of the lungs, and, in several parts, of enlargement of the air-tubes. To use the expression of a medical friend, who saw him with me, "there was not a sound square inch in all his lungs."*

The treatment was simple and uniform. At first, he was fomented morning and evening, and rubbed with tepid wet towels. He wore a compress on the stomach, and drank a claret glass of water frequently in the day. By degrees, I got him on to bear cold rubbing; then he was partially packed in a damp sheet: then entirely so, except the feet. The shallow bath, after the sheet, was taken at about 65°, sometimes higher, sometimes lower, as I found his pulse and his general sensations. In diet, the object was to avoid bulk; he took meat and bread for dinner, and only bread at other meals. Very little exercise was possible for some time, even had it been desirable, which it was not; he drove out occasionally, and sat in the air a good deal, it being summer-time. By watching opportunities and careful examinations, I was enabled to push the treatment up to the point of his taking two wet-sheet packings in succession every morning and evening, with the cold shallow bath after them. He also attained to six and seven tumblers of water daily. He never could bear the sitz bath, which I tried on several occasions, and at several temperatures; it always disagreed, bringing on a paroxysm of indigestion and difficult breathing; so I desisted from it, the rather as the bowels, to promote whose action I had prescribed it, gave way, and remained active always afterwards. He was also very uncertain as regarded the compress; at times it would not get warm, at others, it became too warm, and made him restless and nervous. Ever and anon, fomentations with hot water were necessary. All these small, but really important points of treatment, being closely attended to, the main treatment, the wet sheeting, prospered wonderfully. The fits of coughing diminished more than one half in number, and much more than that in intensity. His face *opened;* his spirits rose; his desire for, and capability of walking, augmented daily; the indigestions were also much less frequent. There was not much change in the treatment, except in its increase or decrease, during the time he remained at Malvern; and it would be endless to relate the circumstances that arose demanding slight alterations. At the end of four months this shattered frame, for which the grave was yawning before he left London, and which had been given up as hopeless of relief, returned to London strong enough to engage (much against my advice, however) in the old turmoil of public and private business. Since then, now two and a half years, he has persevered in the regimen, and occasionally in the active treatment of the water cure, giving himself a wet sheet, or fomentations, according to circumstances which I had indicated to him in writing. How he has fared since he left Malvern, and the opinion he holds concerning his recovery, will be best gathered from the following extract from a letter which he wrote to me in August, 1845, in answer to my inquiry whether it was true that he was ill again:—

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* The medical friend alluded to is a physician of great attainments and practice in London. Visiting me for a few days, he, in the course of conversation about the water cure, of which he had seen nothing, told me I "*dared* not apply the wet sheet in lung diseases." My reply was to take him to see the subject of this case, who allowed him to examine his chest (the result being the exclamation above), and good-naturedly offered, as it was near the time for his packing, to have it done before him. He coughed before getting in, but assured my friend that it would cease in three or four minutes after being packed; which it did. Returning from this scene, my friend asked me if packing in the sheet was good for an incipient cold. I told him it would cut it short. "Then I will try it to-morrow morning," said he. It was done, *presto*, and not only dissipated his cold, but opened his bowels, which had not acted for years without a daily pill. Upon this I urged him to stay a fortnight, and continue it and the sitz bath daily. He did so, and has never taken medicine for his bowels since. If medical men would but *see* before they assert!

"You are incorrectly informed as to my health. I assure you, since my return I have been most decidedly better. I have been obliged to attend very closely to business, but I am thankful to say I have been enabled to do so.

"I wish, for the benefit of others, that the water cure was more generally practised; the more it is known, the sooner the prejudice that is now kept up by interested persons would give place to confidence and restoration of health to many who, like myself, have been the victims of the drug system. I can, however, enter into the feelings of many; for I myself treated the whole water system as a piece of humbug, and joined in the laugh and ridicule which the mere mention of lying in a wet sheet produced; and when I first consulted you, at the urgent request of my brother and sister, who had derived great benefit, I was told, with much solemnity, by my medical adviser here, 'that if I was to get into a wet sheet I should not come out alive.' Up to the time I left London for Malvern, I never missed one day (for some months prior) taking medicine; and you may perhaps remember I had three kinds carefully prepared for my use, in tolerably large quantities—one to produce sleep, one to relieve a most distressing cough, and the third to give tone to the stomach and produce appetite, besides pills to act on the bowels, which I was obliged every other day to take. At your request, I 'threw physic to the dogs,' and *it is now more than two years since I have taken a grain of any sort or kind of medicine.* My general health is very much better; the compress at all times produces the required relief of the bowels, and although my cough is not gone, it is far less troublesome, and seldom disturbs me in the night. I had, as you are aware, four wet sheets in the day, and always felt more reluctance to leave their soothing influence than hesitation to envelop myself; though to the uninstructed the thought is most chilling.

"If I could detail the complication of ills under which I suffered, the simple cure would not suffice for most people; and if I can part with my cough, I shall ever consider it the most fortunate circumstance of my life that I was induced to place myself under your most judicious and skilful treatment."

Truly this patient had "a complication of ills:" and although he has still some cough, because there is organic enlargement of the air tubes, I have more pride in relating the partial restoration of such a desperate case than the total recovery of a dozen ordinary cases. It speaks volumes in favour of the water cure, and has confirmed my faith in it more than any I have had. Under the old medicinal plan, I must have done as the previous medical adviser of this patient did—give him up as hopeless. The means were not in the Pharmacopœia, and none can be blamed for that. Not the least pleasure derivable from the success in this instance is, that a most estimable man and useful member of society has been restored to the large sphere of his utility.

Of *bronchitis* accompanying organic disease of the heart, I have had three cases in which the water-treatment was decidedly palliative. In these the partial wet-sheet packing was used, with tepid ablution after it, and a compress was worn over the chest night and day. I mention it here, both because it is a means of smoothing the path of the doomed patient by diminishing the harassing cough, and because I would record the perfect safety of the application: of which more in another section on heart disease.

§ 3. PULMONARY CONSUMPTION.

Tubercle, or *tubercular matter*, the inflammation, suppuration, and ulceration of which constitute the different phases of pulmonary consumption, properly so called, is a morbid tissue, the result of morbid nutrition. That nutrition dates from the stomach and other digestive organs. Tubercle is never formed unless there has been, and is, disordered assimilation of food, imperfectly formed blood as a consequence of that, and, besides these, sympathetic irritation radiating from the centre of nutrition to the lungs. If there be not these conditions, persons may take cold, have inflammation of the lungs, which shall dissipate or end in abscess, but they will not have tubercular deposit. *There never yet was tubercular deposit with a sound digestion.* As in the case of *bronchitis*, this fact has a highly practical influence on the treatment of persons who are suspected of a consumptive tendency. If the condition of digestion is to be considered, it becomes a question how far it is judicious to coop those so situated in one or two hot rooms during six or seven consecutive months; whether it is desirable to send them to the malaria of

Rome and the dyspeptic clime of Italy generally; and how far the system of high feeding and tonic mineral waters is effectual. *Me judice*, neither the climate of coal-heated rooms, nor the scorching sun and freezing *tramontane* of Italy, are at all adapted to overcome that infirmity of the digestive organs which lays the foundation of tubercular consumption; neither on the vital nor the chemical theory of life do we find in these means the remedies for the enfeebled power of blood-making, whence the morbid deposit in the lungs is traceable. And as regards the plan of high feeding, the "beef-steak and porter" plan (which, by the way, acknowledges the deficient vitality of the blood), it would be all very well if the stomach could well *digest* the food—a question which is begged, but can by no means be granted; else what necessity were there for the tonic minerals that have been by many declared the true remedies for the consumptive tendency, but which, in truth, only afford, like all medicinal tonics, artificial and temporary energy to the stomach, to be followed by augmented exhaustion?

The first two of these means look only to the lungs, to the air which they are to breathe: the food and physic in the latter have reference to the stomach digestion only. Now, from what precedes, it is plain that both require attention, and the way to regard them is as two processes of digestion—one, of food in the stomach; the other, of atmospheric air in the lungs. A physician of tact would give the stomach just so much as, and no more than, it could transform into healthy chyle. He would also measure the capabilities of the lungs to analyze or digest the air presented to them; and he would always bear in mind, that in each of these organs there was a standing irritation, liable to be exasperated by overworking of the function of either. Further, he would endeavour on the one hand, to diminish this irritation, and at the same time to increase the extent, as well as to improve the character, of the digestion. Thus, he would keep down irritation in both organs; he would adapt the food and air to the power of each, endeavouring to augment that power in both; and, as a result, he would cause the production of a better blood, and have it better distributed, instead of congesting in the two localities. Suppose him to do all this, he will retard incipient consumption, and postpone for some time the inevitably fatal event of confirmed consumption. All medical men know that, so long as *tubercle* remains uninflamed, it is harmless, and that it may remain so for years; and the deposition of tubercle is synonymous with incipient consumption.

Here is a case illustrative of the value of the water treatment, in that process of gastric irritation which bears upon the lungs with destructive tendency. On the one hand, the stomach irritation arrests the monthly evacuation from the womb: and on the other radiates towards the lungs, being joined by the additional irritation proceeding from the stoppage of the evacuation in question. Between the two, the lungs are pretty certain to become consumptively diseased if the original disorder be not arrested as it was in the following case. Even as it is, I strongly suspect the presence of minute patches of tubercles in the lungs of this patient; but they are certainly not inflamed nor softened; and, meantime, the process by which they are formed is no longer in action.

CASE XI.—THREATENING CONSUMPTIVE DISORDER OF THE LUNGS.—INTENSE STOMACH IRRITATION.

The age of the poor woman in this case is thirty-two. She had abundance of domestic troubles, privations, and incessant labour; the consequence of which was exhibited, fifteen months ago, in the appearance of gnawing at the stomach, distressing sinking sensations there, and strong palpitations of the heart. She had no appetite, but the craving and sinking obliged her to be constantly putting something into the stomach, which augmented the mischief. The bowels were in perfect order. She fought, as she best could, against the disease for three months, by which time the monthly evacuation had ceased. Upon this, and the coming on of cough and profuse sweats, she went to an apothecary near Worcester, who gave her drops, which, she says, "made me much worse." However, she took drops and other physic for three months, when, finding all her bad symptoms on the rapid increase, she quitted the apothecary, and for two months allowed matters to go on as they would. Those months over, she came to me for advice.

I found a pale, ghastly, and emaciated woman; the skin constantly bedewed with sweat, which at night streamed from her; strength gone; pulse small, sharp, and beating

125 in the minute; the heart making frequent and violent leaps in the chest; breathing as short and bad as it could be; cough hard, dry, incessant; tongue fiery red, clean, and swollen; feet swollen, and pitting on pressure; bowels right; no menses for more than nine months; very little sleep. The old gnawing, craving, and sinking at the stomach were worse than ever. The stethoscope showed very feeble respiratory power all over the lungs, and great indistinctness of it in two places, at which spots I believe that tubercles exist in a crude state.

I had a bad augury of this poor woman, and it was not with any great expectation of benefit that I desired her to pursue the following treatment:—To pack the trunk every morning in a towel wrung out of cold water, for three quarters of an hour; to follow it with rubbing in the dripping-sheet, cold; to take a cold sitz bath for a quarter of an hour once a day; to wear a compress over the stomach day and night; and to drink four tumblers of water daily. Her diet was restricted to bread and butter, and farinaceous food of different kinds. She has not tasted animal food since she first saw me. She has continued this plan for nearly six months, and has seen me three or four times in that space; but finding her getting on well I did not disturb the plan she was pursuing. The sweatings were the first to diminish; next, the gnawing and craving of the stomach disappeared; *the cough is quite gone—not a vestige of it remaining;* and during the last three months she has been steadily gaining flesh. The breathing is strong enough to allow of her going well up a hill, and the respiratory murmur given through the stethoscope is much stronger. But in the former spots, where it was wanting, it is still deficient; and this confirms my belief that tubercular deposit exists there. She is saved, however, from pulmonary consumption, which sooner or later was inevitable, when such intense morbid sympathies were all fixing on the lungs together. At this time (July, 1847) she is in excellent health, and officiates as bath-woman to several of my patients.

There appears among medical practitioners a great dread of the smallest disordered sound of the respiration. I have had several patients who have passed from two to five winters in southern climates in consequence of the assurance of their attendants that it was the only way to save the lungs. I examined the chest, found feeble respiration over a greater or smaller extent; short cough, especially when the chest was tapped with the finger, and other indications of impending mischief in the lungs. But I also examined the skin of these patients, and found it feeble and irritable also, as the lungs were; the stomach, and found it with the same attributes. It was plain that the lungs were participating in the general feebleness and irritability of the frame, and that the soothing and tonic applications were indicated; and judging that these could be found more certain and more readily in the water cure than in relaxing climates, I have in several instances taken the responsibility of detaining such patients all through an English winter, and more still, of subjecting them to the processes of the water-treatment during it. In every case the patient has prospered—losing cough and sensitiveness of stomach and skin. How was he ever to do this whilst passing four months of the year in the heat of the English summer and autumn, and the other eight in places where warm dampness is in place of wintry cold? Let patients have this question answered before they set out on their travels.

I am not about to say that, in the water cure, the means exist of curing either incipient or confirmed consumption; such means exist in no plan of treatment hitherto advanced; but, looking to the aims just detailed, I know they may be, in great degree, fulfilled by a hygienic system of management. Thus, the wet-sheet packing, and the compress, are adapted to allay irritation, both in the stomach and lungs. The shallow and sitz baths, with moderate water drinking, give tone to, and augment the digestive power of the stomach, besides aiding a better distribution of blood to the surface. In fact, the quantity of aliment that may be digested, without distress, too, under this *regime*, is sometimes enormous. All this is assisted by exercise. The lungs, meantime, being filled by an atmosphere which should be dry, and not at any time below 45° of Fahrenheit, and never range further than thence to 60° in winter, would receive but small irritation from vicissitude of climate (and it is *variations* more than *coldness* that harms), at the same time that the irritation, coming from the stomach, would be diminished; so that their local excitement, whether of a tubercular kind, as in incipient consumption, or of an ulcerative kind, as in confirmed consumption, would at least be modified, and its results prolonged. But in following such a system, the greatest discrimination and tact are demanded, both as regards the water process and the other hygienic means. It were impossible to go at length into the minutiæ of the subject; and I would repeat that, although I know from the experience of two cases, that incipient consumption has been retarded for more than two years, it is altogether incurable by water, physic, or any other known treatment. Neither the uninflamed tubercle can be removed, nor the ulcerated cavity it has left, healed:

> "Hæret lateri lethalis arundo,"

not to be withdrawn by human art. Yet I am so convinced, that the judicious use of the water-treatment reduces the harassing evils of consumption, the hectic, sweatings, bad sleep, and languor, and prolongs existence to some extent, that I have judged it proper to make these remarks, although they are not *apropos* to *cure.* But is it not gain to be spared even a little of the stupor of opiates, the exhaustion of bad sleep and sweatings, which are the "heavy day on day" of patients in consumption? That these can be in great measure avoided, notwithstanding the unceasing onward progress of the miserable malady, is shown in the following extraordinary case, with which I close the subject:—

Case XII.—Pulmonary Consumption.

A young lady, aged twenty-five, three of whose sisters had died of tubercular consumption, came to Malvern in December, 1842, and was visited by Dr. Wilson and myself. We ascertained by the stethoscope, that there was ulcerated cavity in the left side of the lungs, as large as a small orange. This, *the only certain sign of true consumption,* was accompanied with cough, enormous expectoration, frequently bloody perspirations, and so forth—signs that may exist *without* an ulcerated cavity. In the course of the first three months after she came here, it happened that four or five medical gentlemen from different parts visited Malvern, and were taken by Dr. Wilson and myself to examine this patient. They all expressed themselves perfectly satisfied that she was in true consumption, and spoke of her life's duration as probable for from two to six months. We had her wrapped in the wet sheet every morning; a cold ablution after it; a cold sitz bath for fifteen minutes twice a day; and a cold ablution at bedtime. She wore a compress on the chest and pit of the stomach; and she drank seven or eight tumblers of water daily. Under the operation of this treatment, she got rid of all fever; her rest at night was complete; her cough became confined to about half an hour on waking each morning, when, however, she expectorated nearly half a pint of pus; the sweatings ceased; and, from being oppressed and distressed by food, she came into the most happy ignorance of having a stomach at all, save by the appetite that took possession of it three times a day.

A year passed over. In December, 1843, she was more ruddy, more stout, and more cheerful, than in the previous winter. But the stethoscope gave signs of a cavity in the lungs much larger than in the preceding year: the main, the destructive disease, was steadily gaining ground, notwithstanding the wonders the water was effecting in other respects. The most extraordinary part of the history is, that even at that time, when the left side of the lungs was nearly excavated, she would *run* up the Malvern hills with very little shortening of breath; and she could read or talk for an hour together without cough or distress of respiration. All this gave her that hope which attends upon others afflicted with this deadly malady, who have far less *apparent* ground for it than she had. Few in this life were better prepared for another than she was; but this absence of all bad signs, save one, came in aid of nature's yearnings, and she clung, with a certain hope, to the prospect of recovery. But it was vain.

At length, in April, 1844—seventeen months after her appearance at Malvern—she became all at once nervous, sleepless, without appetite. Some gastric derangement had taken place, and with it her hope fell to the ground, as it does in all stomach disorders. She spoke of her approaching end with the greatest composure, and expressed a wish that it should take place among her relatives in Devonshire. Thither she went in May, 1844. I gave her directions to follow out some parts of the water treatment, not so active as those she had already pursued. She corresponded with me on the subject of her disease; she rallied repeatedly both in stomach and hope; sank again; in January, 1845, her letters bore the marks of delirium; but she did not sink into death until March, 1845, *two years and four months after she had been found to have a large consumptive cavity in the lungs!*

§ 4. PALPITATION OF THE HEART.—ORGANIC DISEASE OF THE HEART.

Heberden's remark on palpitations of the heart, "*Aut nulla requirunt, aut omnia vincunt,*"* is more epigrammatic than true, when the water-treatment is concerned. Ordinary nervous palpitation does admit of *cure* by that treatment, and it is of the first importance to cure it. It is only a symptom of irritation in the great nervous network about the stomach, generated by food, by alcoholic drinks, by mercurial courses, by the presence of worms in the digestive canal, by accumulations in the colon, by retention of the menstrual flux, by mental affections—all acting on the centre of nutrition, whence morbid sympathies are propagated to the centre of circulation, producing irregular action there. Whether such action owns this source, or is attributable to structural disease of the heart, can only be certainly determined by the stethoscope; the "bellows" sound being the characteristic of *nervous* disorder there. But, after all, the malady to be treated is irritation of the ganglionic nerves at the pit of the stomach. Accordingly, the packing with a wet towel down the front of the trunk, fomentations of the pit of the stomach with warm, not hot, water, cold sitz and foot baths, are the remedies most employed. Of course, where so great an object as the heart is concerned, it behoves to watch the treatment; in such a case no remedy whatever is safe without minute attention. Thus the wet towel must be applied as the mucous membrane and skin are more feverish, and in no case continued for a long time together; there should be an intermission of a few days every now and then, and mere sponging, water not lower than 60°, should be in place of the cold shallow bath. The fomentations should be only a good degree of warmth, not hot; neither should any part of them touch the ribs, for in either event they rather set the heart beating. The same applies to the compress, which, however, should be often changed, otherwise it makes the heart irritable. The sitz baths at 60° should be taken for half an hour at a time; they always reduce the pulsations of the heart; and the foot-baths cause a derivation that seldom fails materially to relieve the visceral irritation. In fact, the treatment should be sedative: all vehement re-action should be avoided, since it is necessarily effected by quickening the circulation, which is as necessarily the work of the heart. This is especially the reason wherefore it is improper to drink large quantities of water, which are highly stimulating to the general circulation. I have always directed a large wine-glassful only to be drunk at a time, and not more than from one to two tumblers in the day. To follow the Gräefenberg rule of drinking as much as possible in all cases, would be to verify the accusation which some have brought against the water-treatment, that it causes heart disease. Active exercise is also bad. I think it very probable, that palpitation of the heart has been induced by the indiscriminate water-drinking, and incessant walking, which are inculcated by those practitioners who, themselves lacking thought, draw all their inspiration from the routine of Gräefenberg. But, with care to avoid all revulsive effects, palpitation of the heart is a perfectly curable malady by the water-plan, as I have ascertained by several cases, one of which I give briefly.

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* "They either require no remedies or they resist all."

CASE XIII.—NERVOUS PALPITATION OF THE HEART.

A youth of twenty-two years sought my advice in the summer of 1844, for palpitations, from which he had been suffering for between two and three years. They were exceedingly violent, and interfered with the circulation sufficiently to prevent the return of blood from, and to congest, the head, causing headache, and to congest the liver also. They were present, with greater or less vehemence, when lying, sitting, or walking; and they were aggravated by food. The pulse was generally about 100. The pit of the stomach was sensitive on pressure, and afforded sensations of sinking and gnawing. The appetite was good; the bowels tolerably regular: but, as often happens in irregular action of the heart, whether from organic or nervous disease, the kidneys acted capriciously, now scantily, and then excessively. His sleep was dreamy, as is usual in cerebral congestion. Awake, he was in a constant state of trepidation, blushed, and was ready to sink when spoken to. The tongue was clean, swollen, and fiery red, bespeaking a high degree of nervous dyspepsia. Extreme flatulence was the most palpable sign of indigestion he exhibited.

The gradations of the tepid and cold-sheet rubbing were passed through by this patient. Then fomentations were applied over the stomach for half an hour every night. He took one sitz bath, at 65°, and one foot-bath daily. He was kept on very low diet, having a small quantity of meat only every other day. I directed him to take a wine-glass of water when he liked, and only then; and I advised gentle horse exercise rather than any walking. In the house I ordered him to keep the recumbent position, with the head high. After a fortnight of this treatment, I had him packed in the towel once, and then twice daily: but after four or five days of the twice packing, I found the daily double reaction becoming too much, and therefore reduced it to one daily packing again. With this he went on for three or four weeks, with intervals of a day now and then. The warm fomentations, too, were continued; but he was only able to wear the compress a part of each day. No water that he used, except that for the foot-baths, was under 60°; and as it was the summer season, no shocks came from that source. By perseverance in the cautious and accommodating course I had from the beginning pursued, watching the capabilities of his body, and desisting from or augmenting the treatment in accordance, this youth left Malvern, after seven weeks' residence, as nearly well as possible. I recommended him to take a round in Wales on his way to the north of England, and gave him directions how to proceed with a modified water-treatment at home. Six months afterwards he wrote to me thus:—

"It is so long since I left Malvern, that I feel half ashamed to commence a letter. I deferred it at first, in order to be assured of the permanency of the cure. I am glad to be able to say that, if thou hadst told me how I should have been three or four months after leaving Malvern, I should no more have believed it than if one should now tell me that, four months hence, I should be mayor of Sunderland, or, rather, that I should be strong enough to fell an ox with my fist, or roll up a pewter plate. I am fearful of boasting, but I consider it only due to thee to say whether thy treatment be successful or not. My journey through Wales was very beneficial, as thou hadst predicted. I did not feel *very* strong for a week or two after coming home; but I soon found that I was improving, and gaining in strength and weight. I discontinued the treatment after about three months, with some small exceptions, and am now in better health, I may safely say, than I have been for some years. The palpitations never trouble me now, except I get some indigestion from indiscretion; so that I hope that, with due care, they may be entirely overcome."

Let us suppose that this youth had not been relieved, but, on the contrary, had gone on with indiscriminate eating, exercise, and mental emotions, what would have ensued? The morbid sympathies sent from the digestive organs to the heart, and which, so long as they only affected the nutrition of the *nerves* of the heart, would only cause varying palpitation, in the course of time would have affected the nutrition of the *muscular substance* of the heart, and thus *organic disease of the heart* would have been established. It is always so. First, there is the *nervous*, or, as it is sometimes called, the *functional* disease of a part, in which the nutrition of its organic nerves is disordered, and this affects the organic secretions, sensations, and movements. Up to this point, the effect in the heart, for instance, is dependent on the cause in the stomach, and intermits or increases with it. But gradually the disorder of nutrition extends from the tissue of the nerves to the tissue constituting the bulk of the organ, and then begin the phenomena of *structural organic disease*, which continue in spite of their primary cause. A new and an incurable disease has been established. Numberless are the instances of structural heart disease which might have been avoided, had this view of their origin been steadily maintained and acted upon, whilst yet mere curable nervous palpitations existed, and were dependent on digestive influence. But the minute ganglionic nervous sympathies of the viscera are sadly overlooked; and no better instance of such neglect could be offered, than the Latin axiom with which I commenced this section, and which proceeded from the pen of a writer whose position in the medical world was of the highest. Nervous palpitations *do* require remedies, and *ought* to be treated, Heberden's dictum notwithstanding. It is only then that they are curable.

Although most averse to have anything to do with organic heart disease, I have been as it were compelled, in three instances, to attempt something for it. In each case, the amount of relief obtained astonished me. The remedy was a small wet sheet wrapped round the trunk of the body, or a large towel down the front of it, and closely covered with blankets. This was done generally twice daily ; and sponging with tepid water of the parts that had been packed followed. The general quietude and decreased action of the heart were always striking, but did not last more than a few hours ; hence the necessity for its frequent repetition ; and it was always practised once in the evening, in order to secure some sleep, which it seldom failed to do. Its action on the *kidneys*, which are generally torpid in this malady, was most beneficial, altering both the quality and the quantity of the urine for the better : indeed, in one case it succeeded so far as to transform legs that were as hard as marble with accumulated fluid into flaccid masses of flesh. I believe all this to be done by the soothing and alterative influence of the wet sheet on the ganglionic nerves supplying the heart and stomach ; for not only was the action of the heart less *irregular*, but there were signs of amended digestion in the tongue, feelings after eating, diminished flatulence and acidity, &c., which, no doubt, allowed of the better action of the kidneys, intimately connected as the functions of those organs are with the digestives. But the result on *the air-tubes of the lungs,* in one case, was the most satisfactory ; the wet sheet, and total ablution after it, actually abolishing a cough which arose from the inflammation of the bronchi, so usually attendant on organic heart disease. This was in a case of *aneurism of the heart*, accompanied by enormously enlarged liver, dropsy in every cavity of the trunk, and of all the limbs ; yet did the wet sheet both subdue the cough and augment the urine.

In all these instances, the partial wet-sheet packing and tepid sponging were the only parts of the water-treatment employed ; no others, not even hot fomentations, are applicable ; in fact, these last increase the irregularity of the heart's action. It is needless to add, that so soon as the wet sheet is given up, the evils of the patient's lamentable condition immediately grow again, and why? there is a standing, immovable cause at work. Still I have thought it right to note down the fact, that alleviation of some of the distresing symptoms of this incurable malady may be so far obtained as to render life less intolerable, and perhaps death more distant.

CHAPTER III.

DISEASES OF THE NERVOUS SYSTEM.

Regulator function of the nervous system on nutrition and secretion—Functional and substantial disorder of the nerves—Distinctions between nervousness and hypochondriasis—Symptoms of the minor degree of neuropathy—Hypochondriasis and its treatment—Essential character of neuralgia—Tic douloureux of the face—Sciatica—Nervous headache—Distinctions between apoplectic fulness and congestion of the brain; reduction of both states—Paralysis and its treatment—Chronic irritation of the whole ganglionic system—Spurious palsy.

After being formed by the stomach and the lungs into material fit to nourish the body, the blood is distributed to every portion of it, entering the ultimate blood-vessels, or capillaries, where the *third process of nutrition* takes place. But besides the nutrition of the tissues which takes place in the capillaries, secretion, a highly important function, is also there effected. The blood deposits the solids of the nerve, muscle, bone, &c., of the body, and also the mucous bile, tears, urine, fæces, skin, &c. It might appear, then, more in train to treat now of the diseases incidental to this third part of the grand process of nutrition. But it must be remembered, that it takes place under the influence of that portion of the nervous system called the ganglionic; and it thus seems more desirable first to mention the diseases of that portion. This has been done to some extent in speaking of the digestive organs, where its great centre is. But as I have said before, (p. 5,) wherever the matter of the body is deposited, there are ganglionic nerves presiding over it. Now, the brain and spinal cord represent the next great mass of ganglionic nervous matter to that of the viscera; and so close are the sympathies between these two masses, the one in the viscera and the other in the brain, that in treating of nervous diseases it is impossible to separate them. Accordingly, this chapter is dedicated to the consideration of the maladies which arise out of the sympathies between the viscera and the brain and spinal cord. And let it always be borne in mind, that inasmuch as the brain matter itself is deposited under the ganglionic influence alluded to, all the phenomena of the brain are attributable to modifications of the same influence. It is only by keeping this in mind, that the extraordinary power of the brain and spinal cord over the nutrition and secretion in other tissues can be made clear. Mental affections cause emaciation of the body, because the nutrition of the body and brain are under the same influence. Terror causes enormous secretion of air, or fæces in the bowels, because the same ganglionic system of nerves predominates over the nutrition of the brain and the secretion of the intestinal mucous membrane. It is, in short, impossible to have irritation in the visceral ganglionic system, without having it more or less exhibited in that portion of the system which regulates the nutrition of the brain, spinal cord, and nerves thence arising; and equally so, to have cerebral irritation without the visceral nerves being affected by it.* The practical bearing of this physiological conclusion is of the first importance, as will be seen in the course of this chapter.

In arranging the maladies to be treated of, I shall pursue the same plan as heretofore; that is to say, I shall first refer to those which exhibit *functional* disorder, without any palpable substantial change in the nervous organs; and next, to those in which the diseased phenomena depend on evident fulness of blood, compression, or change of structure. In this way we shall speak in succession of *nervousness*, *hypochondriasis*, *neuralgia*, or nerve-pain; *apoplectic fullness of the brain*, *congestion of the head*, *paralysis*. Finally, this will be the best place to give some account of two maladies which I have observed in my large opportunities of beholding chronic disease at Malvern, and which I have not seen described by any medical author; to one I have given the name of *ganglionitis*, or chronic inflammation of all the ganglionic nerves of the viscera; and to the other, *spurious palsy*, to which I have alluded in the first part of this work. (See p. 25.)

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* In both cases, the diseased *sensation* of the body is built upon the diseased *irritation*, as represented by the capillaries, as I have shown elsewhere. (See p. 5.)

§ 1. NERVOUSNESS—NEUROPATHY—HYPOCHONDRIASIS.

It is impossible to be afflicted with either of these disorders without having the brain involved, but it is in very different degrees. In both, the starting point is in the visceral nervous system. In simple nervousness, the brain circulation is kept in an irregular condition by the irritations proceeding from the viscera; the patient varies exceedingly in his sensations; his mind is vividly alive to all subjects, and full of passing imaginations; exquisite sensitiveness to all external things is his torment; and his secretions vary as much as his sensations. There is as yet nothing *fixedly* wrong in the head. But this persisting for a long time, and aggravated by treatment, may, and constantly does, pass into the more intense degree of nervousness, to which the name of *hypochondriasis* is given. In it the patient is only alive to one train of thoughts, which refer to the health and safety of the individual; external things only act upon him as his diseased fancy pictures their action on his health; his secretions are *constantly* deranged; everything announces a *continuous* derangement of the circulation in the brain.

In this work it is impossible that I should enter at length into the multiform symptoms of either form of neuropathy; they whom it concerns will find the subject treated in full in another of my writings.* A *resumé* of those of the ordinary nervousness may, however, be made in the following manner:—Indefinable uneasiness; despondency or irritability of mind; diminution of physical strength; yielding and tremblings of the limbs; starting at noises and sights; giddiness, and tendency to faint; sense of sinking or dragging at the pit of the stomach; sensitiveness, or pain of the abdomen; pains, generally of a transitory nature, in various parts of the body; partial and occasional obfuscation of sight; numbness, or, on the other hand, preternatural sensitiveness of some point; partial sensations of heat, as in flushing of the face, or burning of the eyeballs; creeping sensations; itching sensations, particularly of the eyelids, nose, or scalp; shuddering, with or without external causes; involuntary twitchings of the limbs and face; palpitation of the heart, and at the epigastrium; sighing; hard cough; sense of dread or shame without definable cause; tendency to incessant motion and change of place; sleeplessness, or broken, dreamy, unrefreshing sleep; appetite capricious, sometimes, however, unchanged and steady; nausea or vomiting; secretion of the mucous membrane of the eyelids and nose generally diminished; eyelids red and turgid; the tongue sometimes foul, frequently otherwise, but for the most part redder or more turgid than usual, with tendency to dryness; bowels costive, but frequently distended with air and rumbling; urine varying with the nervous symptoms or the food; countenance ofttimes unchanged, but more frequently anxious, or, as it were, on the *qui vive;* complexion often florid; emaciation rarely to any extent; feet and hands almost invariably cold and clammy.

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* Exposition of the Symptoms, &c., of Neuropathy, 1 vol. 8vo. 1840.

Such is the cohort of morbid signs under which individuals may continue to drag on a feverish sort of life for weeks, months, or years; moving among their fellow-men with a constant dread of collision, physical and mental. To them, excitements come as shocks, which to others more happily circumstanced are the pleasing stimulants that render delicious the cup of life. To them, new acquaintances, novel scenes, varying modes of life, the motley and complex associations that keep the normal nervous system in active though healthy play, are, for the most part, electric impressions, which, after elevating the feelings "Olympus high," and engendering a *painful* excitement, "leave the flagging spirit doubly weak." Yet are the nervous ever craving for excitement: it seems as if they secreted an immense quantity of nervous energy which *must* be wasted on some subject or other, else it would prey upon themselves. They seek society, and come out of it exhausted; they seek continual food for their peculiar sensations; they yearn towards excitement, even as the moth towards the consuming flame; they are leaves that tremble with every wind of circumstance, yet to whom a calm is desolation. The unceasing stream of sensations from the viscera is ever acting on the mental organ, maintaining it in a state almost of orgasm, or, at least, of supervitality, rendering it thereby constantly prone to the exercise of its function, and that function excessive—a convulsion rather than well-ordered operation—an involuntary rather than a voluntary act. It is because the brain is kept in a state of vivid perception, by the irritations proceeding from the ganglionic viscera, that all the external senses are so sensitive, and all the internal senses and the thought are so painfully busy. Did not such irritations play on the brain, it would be calm enough in its perception of outward, and its regulation of inward sensations. Behold a man before and after dinner; his brain feels and thinks differently, because his stomach does. Nor are the phenomena of nervousness merely mental, nor the results of mental agitation alone. Restlessness, fidgetiness, impatience, tense countenance, tremulous movements, &c., &c., are truly evidence of a brain in a state of vehement excitement. But examine further into the peculiarities of one so afflicted, and you shall find him possessed of an excitable heart, that begets a changeable pulse, and palpitates with the slightest mental shock; of a tongue and mouth which become dry from the same cause; of a stomach whose function is disturbed by the smallest circumstance, the appetite of which, though good, is speedily satisfied or annihilated, which sinks and yearns from trivial causes; of intestines, that, on the operation of similar causes, secrete volumes of air, are agitated, rumble, or, on the other hand, give the sensation of a vacuum in the abdomen. And these are only a few of the ganglionic symptoms which aid in making up the nervous condition.

But this is not all. A nervous brain not only owes its condition to the ganglionic irritation, but the amount and character of the nervousness is regulated by the amount and character of that irritation. If, for instance, the womb adds its excitation to that of the stomach, we have the character of *hysteria;* if the liver be disordered as well, we have the utmost amount of impatience and suspicion imparted to the nervousness, &c. In short, the brain only feels as the viscera dictate; and none know this better than nervous people themselves, who seldom speak of their cerebral, but invariably of their visceral sensations.

The brain, then, in the *simple or minor* degree of *nervousness*, receiving exciting sympathies from the viscera, is itself excited, and re-acts upon those viscera, and a morbid interchange of sensations is thus established. If the attempt to remedy this by stimulants, dietetic, medicinal, and mental, be persevered in, the circulation in both points of excitement becomes more and more deranged, the morbid sympathy between them becomes more and more firmly established, until the brain becomes at length incessantly bent in its thought upon the viscera, whence it derives so much irritation. When this takes place, the second or *major degree of nervousness*, commonly called *hypochondriasis*, may be said to be established. Then commences that life of miserable anxiety about the health, and, for the most part, the health of some of the viscera, which the sufferer tries to be rid of, and which the physician can so seldom alleviate. The brain is more *fixedly* implicated in the mischief, its circulation and nutrition *continuously* deranged, and its morbid mental phenomena incessant under all circumstances: in fact, its function is now as much disordered as that of the viscera, and it preys on them as much as they prey on it. Further, the change in the character of the nervousness seems to show an oppression of the brain and of the spinal cord, the seat of the will; for whereas in simple nervousness there was much flightiness of thought and vivacity of the will, in *hypochondriasis* the former is bent with unswerving fidelity upon one subject, the health, and the will is almost annihilated. Even the fact of incessantly thinking on one subject exhibits the small degree of volition, of command over the thoughts; and this want of command descends to the external senses and to the limbs.* Nothing is more common than to see hypochondriacs who *cannot*, because they *will not*, see and hear, or who protest they *cannot* get

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* The following are the conclusions to which I have come, after a full examination of the facts regarding the healthy and morbid function of the nervous system. The facts as well as the conclusions are to be found at p. 126 of my work on nervousness.

1. Morbid impressions commencing in the brain are reverberated more or less rapidly, on the visceral ganglionic system, exciting in the viscera sensations and movements.

2. Morbid impressions commencing in the visceral nervous system are reflected on the brain.

3. Abnormal sensations and movements in the viscera, however generated, are reflected on the brain.

4. The brain has no cognizance of a morbid impression except by the sensations excited in the viscera.

5. The degree and species of the morbid visceral ganglionic sensation regulate that of the cerebral sensation.

6. In neuropathy, the brain is the medium by which the unusual sensations of the viscera produce their effects on the economy at large.

7. The sensations of the visceral ganglionic system morbidly irritate

out of bed, or rise from a chair, simply because they *will not.* All the facts of this miserable malady go to prove the obstructed function of the brain and spinal cord, their oppression by the stream of morbid irritations arising from the viscera.

Nervousness, therefore, and hypochondriasis are different degrees of the same morbid state, the latter being the aggravated form of the former; yet the difference is sufficient to make a distinction of great consequence in the treatment.

In *nervousness* the *soothing* processes are the most desirable, for in it the symptoms are those of highly excited vitality: perception, sensation, thought, volition, as well as the organic functions, are all rampant, restless, and irregular; the nervous system is strung to the tightest pitch, and vibrates painfully to the slightest touch. So much is this the case, that even the most moderate treatment frequently requires to be intermitted from time to time, to afford rest to the organization; even it is too much to be continuously applied to a body which is like one vast sore, so exquisite are its sensations. If in commencing nervous cases the amount of treatment be one jot too much, too stimulating, too straining in exercise or the water applications, the nervous system "o'erleaps the sill and falls on the other side," and things are worse than before. Hence the impossibility of successfully treating any two cases exactly alike; and the absurdity of the routine of large water-drinking, everlasting walking, indiscriminate diet, and pell-mell and hap-hazard packing and bathing, which marks the practice of those whose easily-earned diploma dates from Gräefenberg, after a short residence there. It is not so that the ever-varying

the brain, and, according to the degree of that irritation, produce either the minor or more intense degree of neuropathy, the brain being more involved in the latter than in the former.

8. The essential nature of nervousness is, therefore, to be found in the morbid irritation of the visceral ganglionic system; and as the abnormal sensations are more especially referred to its epigastric centre, this would appear to be the most seriously implicated.

9. This irritation of the visceral ganglionic system most probably consists in an increased influx of blood into, and nutrition of, its tissue.

10. It is highly probable that congenital or constitutional nervousness consists in an unusual development of the visceral ganglionic system, and consequent unusual susceptibility to impression from the brain, the equable function of which is disturbed by the vehement sensations that are attendant on such susceptibility.

disturbances which constitute the minor degree of nervousness are to be quelled.

In *hypochondriasis*, on the other hand, all the functions —mental, motor, and organic—are working slowly, as if under a load; a load which may be thrown off by the mind, if the organic powers resident in the ganglionic nerves can be made to relieve themselves. To do this they must be roused by the *stimulating* appliances of the water cure, both external and internal; by alternations of treatment, in order to have changes of stimulus; whilst, to avoid interference with the organic efforts thus attempted to be excited, the digestive organs are allowed to have as little as possible to do, compatible with the maintenance of the body. Nor will this be *very* small: for in order to excite the same organic effort in the brain and spinal cord, which I have said is an aim as regards the visceral ganglions, considerable exercise should be practised both on horseback and afoot, in proportion with which should be the amount of food. This gymnastic of the limbs is only of use as it is the gymnastic of the *will*, which it brings into play, thereby convincing the patient that he *can* walk. The same must be done for the mind. Every one about him should be instructed not to hold converse with him about ailments, but to *force* him into some other subject of thought, and, if possible, such as shall most absorb attention. In short, the whole treatment should aim at exciting the animal nervous systems; that is, the ganglionic nerves both of the viscera and of the brain and spinal cord.

Sometimes, however, patients come here with an amount of feverishness of the mucous membrane and the pulse, which requires to be removed in the first instance. It has, for the most part, been induced by violent medication and dietetic imprudences practised whilst refusing to take exercise to counterbalance them; and it is removed by the wet-sheet. For, although an attack of fever is actually curative of hypochondriasis, and very many have been cured by the supervention of small-pox, scarlet fever, and other febrile eruptive complaints, yet no fever will avail for so desirable an end which is not the product of a *natural* effort of the body, and not of irritants introduced into it. In this instance, then, the soothing wet-sheet packing forms an exception to the general practice in hypochondriasis.

All the cases which could be related would scarcely include the infinite picture of simple nervousness. I here give one of the most grievous that I have met with, premising that, happily, not many of those presented for treatment at Malvern are nearly so bad.

CASE XIV.—MINOR DEGREE OF NERVOUSNESS.

A young gentleman had too early and freely been thrown into the gay world of London. Constitutionally nervous, a vast amount of morbid nervousness was soon added to it, in consequence of the excitements, both coarse and refined, into which he plunged. Late hours, women, and their results, in the shape of a mercurial course, made up the bead-roll of causes, and he became a neuropathic. Terror of some unknown evil was always upon him; he almost *ran* through the streets, as if from some pursuer; he was always in a fidget and hurry; his face bespoke the most intense anxiety, although full and sufficiently coloured; there was a constant frown over the nose. Three or four times daily he was seized with tremblings, fainting, cold sweat, and a sinking of the bowels, as if they were falling down about his feet; at such times he was utterly paralyzed with fear. Luckily, the seizure gave him two or three minutes' warning, in the growing sinking of the stomach, and he would fly into a druggist's shop or a public-house, and swallow some ether or brandy, though he had, otherwise, ceased the use of stimulants. In consequence of these attacks, as well as the *constant* terror that beset him, he never dared to be many yards distant from some one; he was therefore compelled to keep within the streets of London; he dared as soon have walked into Vesuvius as go alone upon a large common. At night he was two or three hours before he could get to sleep, but slept well, when once off, for about five hours. His mind was clear enough on most subjects intellectually, but morally it was quite without power; touchy, impatient, yet without a particle of courage or firmness; as might well be the case, seeing that the picture of impending evil was always over him. His volition was inexhaustible; he was driven, by an impulse within him, to walk incessantly; but this it was which, in my belief, brought on, or at least made more frequent, the attacks above mentioned. He ate and drank nervously, *bolting* his food as if he had not eaten for a week; yet his appetite was not always good—never large. The tongue was large, split, and clean. He was troubled with immense volumes of wind rumbling about the bowels: which, however, were in tolerably good order. The kidneys secreted a vast quantity of limpid water, especially in the night time. The pit of the stomach was the seat of great sensitiveness, sometimes on pressure, but always exhibited in sinking, feeling of a ball, &c.; and there it was that, as he said, everything he thought was felt; and thence it was that all his disagreeables sprang. The skin sweated copiously with the smallest exercise, and the hands were always wet and cold.

Against this array of miseries I did not anticipate any *speedy* action of the water-treatment; but I was wrong. Nightly fomentations with hot water, and packing in the wet sheet, at first once, and soon twice daily, immediately produced a soothing effect. The former made him fall to sleep, even whilst they were going on; and both in the sheet on waking in the morning, and in that at five o'clock P.M., he slept. He changed the abdominal compress frequently in the day, and was always quieted by the change. Five or six tumblers of water were his daily dose. I forbade more than half an hour's exercise at once, and this he took before each meal. Lean meat, bread, a small quantity of butter, and salt, constituted his whole diet. I even prohibited liquid at any of his meals; and he reclined for nearly an hour after them. The first symptom which disappeared was the sweating of the skin, which became more turgid. The sleep followed, but more slowly, being every now and then deficient for a night. After he had been under treatment about three weeks, he took the cold sitz bath for half an hour at noon and from that day his sleep improved. Occasionally his head ached, or felt weak after the wet sheeting, which was then remitted for a day or two, and a second sitz bath, or a foot bath in the evening, taken instead. With these exceptions, the treatment continued as at first laid down, for nearly six weeks, by which time this neuropathic had again and again reached the top of the Worcestershire Beacon alone, and remained there alone for half an hour, or more, without a single tremor or mental quaking. He had now licence to walk, and took advantage of it to such extent, that he once or twice came home quite knocked up *in limb*, but no nervous sensation accompanied it. This showed me that the wet sheeting should be diminished, and he therefore had it once daily instead of twice. Having subdued irritation by its means, the object now was to give tone. The douche was therefore employed at noon for half a minute, and gradually longer, with the cold sitz bath in the evening. With these he gained power with astonishing rapidity; he took long walks and rides alone; he became cheerful even to boisterousness, which implies that the imaginary yet undefined evil had vanished from his contemplation; and though he was easily excited, it was quite within the innate, and therefore unchangeable nervousness of his constitution. He left me at the end of ten weeks a happier man than he had been for the previous six years, between three and four of which had been spent in destroying his nerves, and the rest in nervous meditations on their loss. He left me a happier man, not only because he had lost a train of miserable sensations, but because he had gained the wholesome knowledge, that tawdry excitement is not true excitement, and that as much real fun is compatible with early hours and sober habits as with their contraries, and does not leave one quite so nervous. Perseverance in his old course, and in the remedies he took for the attacks, must ere long have either made this patient an incurable epileptic, or the inmate of a lunatic hospital. He quitted Malvern fifteen months ago, and has had no sign of relapse.

Case XV.—Minor Degree of Nervousness.

I will briefly relate this case because the subject of it is a female. She is twenty-seven years old, of a nervous constitution, strong in her feelings and affections. Two years before she came to me, a very severe and sudden mental shock fell upon her. Hysterical, and subsequently more serious nervousness, invaded her with intensity. This last was experienced in fainting, death-like feelings, tremblings, universal pulsation and agitation; but, above all, by the most frightful and almost uncontrollable sensation of *impulse* within her, as if, so she said, something would raise her out of her bed or seat, and drive her out of the door or window, or through the wall even; there was also in this dreadful feeling a sense of impending insanity. These faintings and sinkings, the small, exceedingly rapid pulse, ice-cold feet and hands, incapability of walking above a very short distance, and want of sleep, set the medical gentlemen, whom she consulted, on the path of stimulation—of *supporting* her. She took every possible antispasmodic and opiate; of brandy and wine she was counselled to imbibe an abundance; and the diet she followed was in keeping—turtle, and other strong soups, animal food twice a day, coffee, cocoa, &c., being its constituents. Under this *régime*, to use her own expression, "she knew no peace;" day and night were passed in waking and sleeping tumult, the sleep being as busy as the vigils: the total unrest, the incessant fears, palpitations, pulsations, &c., all augmented, the more she took remedies against them; and when, after and in spite of warning and remonstrances, she came to try my treatment, I found as wretched a neuropathic as could be well imagined. Religion had reconciled her to the blow which the Author of religion had inflicted; but its consequences remained in her physique, aggravated by the irrational means which had been employed against it. Every organ and function were in a state of maddened excitement; looks, words, movements, were all those of impulse and disquietude; and she stopped several times to shudder whilst she recounted her mental nervousness. Her organic functions were disordered too: appetite almost gone; all kinds of sensations within her; pulse excessively rapid and small; slight nervous cough; bowels tolerably regular; kidneys capricious in their action; skin liable to cold moisture; on the chin, and, indeed, any part of the face, a tendency to small pimples, which are so frequent in the nervous, and often make their appearance in an hour after a more than usual degree of nervousness.

Upon this lady the soothing effect of hot fomentations at night, and wet-sheet packing in the morning, was immediate. Nothing could be more satisfactory than to hear from her, each time that I saw her, that her sleep was improving, and the frightful impulses within her daily diminishing. Within the first week she felt infinitely more calm than she had been for two years. For some time her treatment was confined to fomentation and wet-sheet once daily, the latter being followed by rubbing with the dripping sheet. She took four tumblers of water daily. Her exercise was limited to twenty minutes twice a day. Of course, all stimulants were withdrawn from her diet; she took tepid milk and water with cold toast morning and evening, and a small quantity of meat, with two potatoes, for dinner; this was her food throughout. By degrees, I had her packed twice a day, the sitz bath for a quarter of an hour at noon, and the fomentations omitted. All along she wore the abdominal compress night and day. Foot baths were given once or twice a day, according to the prevailing sensations; for it is not to be supposed that the nervous feelings disappeared in a few days, never to return; now and then a "bad-day" came, dependent, as such days very often are in the neuropathic, upon electric atmospheric changes, alteration of the wind, &c. Nay, even the prolongation of the treatment, without cessation, will sometimes excite the nerves; and in this case I was compelled, twice or thrice, to give up all except the dripping sheet and a short sitz bath daily. But still her "bad days" were elysium compared with her *every-day* torments before coming to me; and she bore both with a beautiful spirit. Twice for a few successive days she experienced nausea, as if some internal crisis were about to appear, but it once went off without any result whatever; on the other occasion a slight diarrhœa followed it. With trifling variations for these circumstances, and an occasional headache, the treatment of packing in the wet sheet was persisted in during the whole time of her stay at Malvern, which extended to fourteen weeks, when she was compelled to leave for home, but with no nervousness save that which is constitutional and congenital with her.

These two cases will suffice to instance the phenomena of great nervousness, as it occurs in the two sexes, and of its general treatment by water. But there is no end to the mingling of symptoms in this distressing condition; and all that can be done is to refer to the *résumé* of symptoms above given, and to the application of the different processes of the water-cure to be given hereafter. There is one kind of nervousness—that connected with what is called in females' "change of life," about the forty fifth year—in which the treatment is only palliative, the nervous tumult persisting more or less, in spite of every means, until the "change" is effected. Still, this is a period of severe trial, and not unfrequently of danger to important organs, the usual monthly irritation of the womb being liable to be thrown upon the heart, or lungs, or head; and the sufferer will find in the appliances of the water-cure a sure and certain way of preventing such dangerous transfers. I have had occasion to treat several females, in whom the extreme sensitiveness of the nervous system rendered the period in question somewhat perilous on the score of this transfer, and have succeeded in obviating it altogether, and making the change of life less distressing. This may always be done by the moderate use of the wet sheet, or towel packing, short sitz baths at 55° or 60°, *warm* fomentations to the abdomen, foot baths, and rest of limb. Here, too, the circumstances of women vary so much, some having excess, others deficiency of the uterine discharge, some pain, others none, &c., that anything like detail of treatment is impossible. After stating the uses of the processes, the practitioner must employ his discrimination in the particular cases, and the fluctuating circumstances of each. It is the only treatment that I have ever found of the slightest use at the period in question.

I now proceed to give a case of the greater degree of nervousness. Very many patients afflicted with this terrible disease have been under my care at Malvern; but with the proverbial fickleness and restlessness attendant on their state, none of them, save one, have remained long enough to enable the treatment to act strongly and permanently on them. The consequence is that I am about to relate the only case of *hypochondriasis* which I have had the luck and opportunity of *curing;* and it must be confessed that it is not one of the most intense kind. But few medical men can record even *one* instance of cure of this most intractable and intolerable disease, the physician being generally as glad to be rid of the patient as the latter is prone to seek another adviser, before any impression can be made on the symptoms.

CASE XVI.—HYPOCHONDRIASIS. THE GREATER DEGREE OF NERVOUSNESS.

This patient was forty-seven years old when he came to me in January, 1843. For twenty years he had been occupied as a commercial traveller, to the temptations of which avocation, in the way of dietetic excesses, he had not been a slave—certainly not, at least, in *drinking*, his quantum being three or four glasses of wine daily. Nevertheless, being a very orderly and a very anxious man, business was no play for him, but a serious wearing and tearing affair, in the fulfilment of which he neglected all regularity of times, eating, sleeping, &c. Meantime, the travelling, the constant change, and the exercise he got, combined to keep up a great appetite, a morbidly great one in fact; and it outran the digestive power, which gradually diminished. He had arrived, in short, at the phase of *nervous dyspepsia.* This was about three years before he saw me. Distress after meals increasing, he had recourse to physic—tonic, aperient, cardiac, &c. Temporary relief obtained thence did not prevent, but rather quickened, the downward progress of his health. He grew anxious about his health: consulted one or two physicians in every town he came to, took all their prescriptions, and went from bad to worse. Strange to say, not one of them ever gave him rules of diet, or diminished his wine! This was his history for three years. He tried absence from business—no use; it made him rather worse. The fiend of hypochondria had fairly entered him, and began to feed on his body, for he grew emaciated as well as miserable. At length, a celebrated surgeon of London recommended him to come to me, and try the water cure; and, with much quaking, he came.

I found him with all the worst symptoms of nervous and mucous dyspepsia, except that the appetite was untouched: a swollen, split, foul tongue, fœtid breath, obstinate bowels, &c., &c. Without much sensation in the abdomen, he always said his malady was there, so truly does the brain appreciate the source of its malaise, although no pain is present to mark it. His skin was in miserable plight, colourless and dead to the eye, but to his senses exquisitely alive to the smallest change of temperature—creeping, crawling, and cold trickling, were always going on in it. He had the usual variety of nervous alarms about his health; but, as regarded his mind, the prominent symptoms were, a loss of volition that was truly distressing, and hysterical depression. His want of *will* was exhibited in an almost incapability of getting out of bed, declaring that he *could* not, and in the want of decision in the most trifling affairs, the choice of a chair to sit on, &c. He would come to see me, weeping like a child, deploring the certain death he was dying, beseeching me to save him, yet vehemently contradicting me when I assured him it was possible. Between these two weaknesses he fell into a fear of the treatment, and went off suddenly, after about three weeks' residence at Malvern, during which time he had been rubbed with the dripping sheet, taken foot-baths, been packed in the wet sheet a few times, and drank seven or eight tumblers daily. He went away, was absent for a month, ran the gauntlet of two or three physicians in London, took their physic, went again to the surgeon before alluded to, who again urged him to come to me. This time I refused to undertake him at all, unless he pledged his word to remain with me four months at least.

In consequence of a considerable amount of internal mucous feverishness, it was necessary to employ wet-sheet packing for a long time in this case, and twice a-day after a little time. The cold shallow bath was used after it. The cold sitz was taken once, and then twice a-day. He wore the compress on the bowels night and day, drank ten and twelve tumblers a-day, and was instructed to walk as much as possible. As the fever of stomach diminished, the wet-sheet packing was diminished also, and the douche was commenced, It had a decidedly good effect in raising the spirits, taking off the misery of the skin, and giving a general feeling of *bien-être.* The quantity of water was increased to fifteen or sixteen tumblers. He was next sweated in the blankets twice, and then thrice a-week, the wet-sheet packing being used occasionally, to repress any feverishness that arose. This active practice of sweating, wet-sheet packing, douche, sitz once a-day for half an hour, and the large doses of water, began to induce critical effects after he had been with me eleven weeks. The bowels became very much relaxed, and vomiting of bilious and acrid matters attended. This rejoiced him exceedingly, and for the first time he allowed the probability of recovery; and, in fact, his *mental* symptoms recovered from that date, his bodily sensations of the skin, &c., and his sleep, having improved some weeks previously. The treatment was persevered in notwithstanding, with now and then a day or two of relaxation. His diet throughout had been simple, but I have since thought somewhat too full; but it is of no use talking to hungry hypochondriacs, who have *great* appetite, and *no* volition. The appetite is sure to have its own way, unless the doctor is always present. Throughout, also, his exercise was great, and rose at length to ten, twelve, and fifteen miles daily. At first under the operation of the wet-sheet, he lost flesh, as is usual; but he subsequently regained it, and more, and of a better quality besides. Much moral treatment was, of course, requisite, and fortunately I obtained considerable influence over him, so that I was enabled to urge him to the exercise of volition, both over the physique and over his fears. At the end of the four months appointed I allowed him to go, deeming him sufficiently secure of health ; indeed, he complained of nothing. However, he continued the dripping sheet, sitz bath, and occasional packing, for two or three months more, when several boils appeared about the abdomen and thighs; he wrote to me about them, and treated them by my written directions. I heard nothing of him for six or seven months afterwards, when he came to Malvern to show himself, declaring that he "did not know what *nerves* meant." He is still flourishing, and likely to do so, since he has learned the necessity of sacrificing some of the anxieties of business to the exigencies of health, such as the regular hours of eating, &c. At this time (July, 1849) this patient remains well.

§ 2. NEURALGIA—NERVE PAIN—TIC DOULOUREUX—SCIATICA—NERVOUS HEADACHE.

In *nervousness*, the visceral irritation preys on the brain and spinal cord in such a manner as to pervert the mental operations carried on through their instrumentality. The mischief in them is of a character which weakens the power of the nerves sent out from them to the muscles, and diminishes the *voluntary* action of these latter ; but no animal pain necessarily attends.

In *neuralgia*, on the other hand, there is the visceral irritation, although of a different phase, which radiates to the spinal cord and brain, but more especially to the former, and begets in them an irritative action, which is exhibited in pain. The pain is periodical, or rather intermittent, for it does not always observe fixed periods. The intimate condition of a nerve in a state of pain is known to be that of inflammation; that is, the blood-vessels of the substance of the nerve and of its sheath are relaxed, gorged, and, pressing upon the sentient matter of which the nerve is composed, excite its sensitiveness to the amount of pain. It is true that, in many instances, no trace of change could be detected in the appearance of nerves that were the seat of neuralgia for years before death: but this does not militate against the existence of disordered circulation in them, since it was always intermittent, and not likely, therefore, to leave trace behind it; it is only *incessant* functional disease that produces organic change.

But another irritation, namely, in the viscera, is connected with this external one. Here, however, it is continued, lurking, liable to be exasperated by an hundred causes to such a pitch, as to rouse immediately the slumbering nerve, on which it is wont to expend its morbid sympathy. This exasperation of irritation in the viscera, and for the most part in the ganglionic net-work about the stomach and liver, coincides, therefore, with an attack of neuralgia: it is an invariable concomitant and cause; and you might as well expect to find a brain without viscera, as a chronic nerve pain without visceral irritation. In fact, neuralgia is a rude effort of the disordered viscera to throw their destructive irritation upon some external and less vital part: it is a process of salvation to the centre of life, and we accordingly find neuralgic patients the most long lived. Besides, it is notorious that, although *tic douloureux* destroys the comfort of life, it never destroys life itself. Were the internal disorder to be concentrated, then it would sap the organs that are most essential to existence: a neuralgic outbreak prevents this. It is an observation worthy of record, that in those cases where the patient from *tic* has been released from it at an age beyond seventy years, he has rapidly sunk into the grave; as if the pain had become a necessary stimulus to the frame, or had saved its nobler parts from destroying disorder.

As may be readily conceived, the frequent repetition of the same irritation in a nerve, renders it more and more easily the prey of the internal mischief: until the smallest possible increase of the latter suffices to induce an attack: and the minutest causes operate violently. The stomach being in a state of *nervous dyspepsia* is astonishingly alive to dietetic irritatives, which are a fertile cause. Whatever agents disturb the nutrition of the body, be it for ever so short a period, are apt to bring on an attack; hence the operation of mental causes, gusts of anger, surprise, &c.; hence, too, the exquisite sense of barometric and thermometric changes in the air, and of its electric vicissitudes, which *tic* patients possess; these causes disturbing the general nutrition of the frame, tell more especially upon the visceral centre of it, lighting up its chronic irritation. I have known a neuralgic sufferer, who felt and predicted a snow storm many hours before it took place, and at a time when the sky was clear and serene: but on looking to the barometer, I found *it* had experienced the electric change as accurately as, but not more so than, the patient. In fact, the nutrition of the skin is always more or less deteriorated, and lacks the power to re-act upon atmospheric conditions; dependent on the internal state of the body, it is less able, in consequence of that state being defective, to resist external impressions; and the patient is often puzzled to account for an attack, when an accurate barometer or electrometer would inform him of the exciting cause.

What is the neuralgic constitution? I have almost invariably observed the disease among *men* in those of great muscular power, and who have been in the habit of exerting it freely, and at same time taxing their viscera with high living and venereal exhaustion—circumstances most likely to create irritation in the viscera, and to render the spinal cord and its nerves the parts in which to excite a morbid sympathy. But the malady is also observable in persons who have worked their brains to the detriment of their stomachs, which they at the same time worried with stimulants. On these two grounds we find more of the disease among military men, and hard-worked men of the law, than any others. Among *women* it occurs in those whose deeply feeling minds have trenched upon the integrity of the viscera; or in those who have strained the latter by rapid child-bearing, and prolonged nursing of their children. The *age* most liable to it is between thirty-five and fifty years: but it begins at other dates. Once established, it is generally worse in the spring than at other seasons: stormy weather and low-flying clouds, with alternations of sunshine and gloom, at any period of the year exasperate it.

Certain nerves of the body are more liable to neuralgic disease than others, and these have been written and spoken of as distinct maladies. To the neuralgia of the nerve whose branches come out of the bone above the eye-ball, under the eye, and in the lower jaw, sending branches to the whole side of the face, and to the teeth, the specific term of *tic douloureux* is usually applied. When the large nerve which runs behind the hip-joint down the back of the thigh is affected, the disease is called *sciatica.* But *tic* also occurs, and indeed, is pretty frequent in the nerves of the arm, especially of the fore-arm. As a transitory sign of dyspepsia, it is often felt in the fingers, in the shoulders, and in the ribs; for the shoulder-pain, I have seen calomel given, under the idea that the liver was at fault: and I have seen leeches applied for supposed *pleurisy* which some sal-volatile immediately removed : so little are these sympathies recognized! Worst of all, *tic* is occasionally universal, every principal nerve in the body being attacked in the course of twenty-four hours. I have seen two cases of *tic* of the entire skin of the body except the face: in one case, to such an intense degree, that exposure of the hand out of a glove for five minutes caused exquisite pain. The skin, and indeed the whole substance of one or both legs, are occasionally the seat of severe nerve pain. The scalp, being largely provided with animal nerves, which, moreover, run in a hard, inelastic tissue, is the seat of most severe neuralgia, which, under the name of *nervous headache*, is the daily torment of thousands. All these forms are connected with the same intimate condition of the pained nerves, and with some phase of visceral irritation, always of a nervous kind, but sometimes with the addition of mucous derangement. It is vain, in our present knowledge of the nervous system, to speculate as to the cause why one nerve, rather than another, becomes the seat of morbid sympathy and pain. We have some grounds for saying that liver derangement is connected with *sciatica;* that nervous disorder of the stomach itself is mostly found with *tic of the face;* and that, when irritation of the womb is superadded to that of the stomach, *tic* of the scalp, or *nervous headache*, is the most common result. Yet all these are liable to exceptions; the great point of practice is to know that visceral disorder of some sort is at the bottom of them all, and to detect the phase of that disorder.

The *treatment* of *neuralgia* is, in great measure, dependent on the duration of the disease; for the longer it has existed, the greater the probability that the visceral derangement has reached the point of obstructed function, and *vice versa.* In recent and not very intense cases, the *excited* state of the viscera points to the expediency of employing those remedies of the water cure that diminish irritation, such as the wet-sheet packing, fomentations, short hip baths, small quantities of water, gentle exercise, mild diet. In the older cases, where mucous disorder and *obstructed* function of the viscera obtain, it may be necessary to use the wet-sheet packing from time to time, but the *stimulating* agencies of the cure should especially be brought into play, such as the sweating, prolonged sitz baths, the douche, large doses of water, and, if the legs be not the affected parts, a good amount of exercise: if they are, a good amount of friction. But these are generalities, and in this more than in any other chronic disease, we find commingling of symptoms, and conflicting considerations of age, the exciting causes, the constitutional tendency, previous treatment, habits, &c., of the patient, which must sway the practitioner when the details of treatment are to be determined. Thus, sweating may be indicated, and to a certain extent should be practised; but the age of fifty-five years, added to mental distress, as an exciting cause, may render the patient's head full; in which case, the effect of the sweating on the pulse and head should be watched, stopped immediately on fulness of the former and tightness of the latter, and the wet-sheet packing or fomentations had recourse to, in order to reduce the circulation generally, and that of the head in particular; having done which, we return to the main indication. Of course these necessary wanderings from that indication prolong the process of cure: but it is for want of such precautions as I have just alluded to, that the water or any other treatment becomes a dangerous one, as it is sure to do in non-professional hands. In the course of the treatment certain disagreeables are also apt to arise, which it is well the patient should understand beforehand, so that he may avoid discouragement.

The first is actual *increase* of pain. This happens in the earlier part of the treatment, and is accounted for by taking, as a basis, the fact hereinbefore mentioned, that neuralgia is itself a rude effort of the viscera to save themselves by throwing their irritation on the external nerves. Now, the effect of the water-treatment is exactly the same: it places the viscera in the best possible position of vitality to effect this diversion in their own favour. No wonder, then, that at first the effort thus encouraged should be towards the nerves, already the recipients of the internal morbid sympathy, and that the old pain should be increased. But, as will now be plain, this is rather a sign of the wholesome action of the treatment, and should be a ground for hope rather than despondency. For, as gradually the whole skin is brought into a more active state of function, the visceral irritation is thrown upon *it* in its extent, or upon the lower part of the digestive canal in the shape of diarrhœa.

The second disagreeable is the nausea and general *malaise* which attend the brisk action of the water-treatment in this malady. Yet, without these, there is little chance of cure; for they are the signals of that uprising of the digestive organs which precedes a critical action in some other organs. The visceral irritation that attends *neuralgia* is one of the most deeply-seated and inveterate in character, and the uprooting of it is therefore a perturbating process for the time being: the disjointing of a long standing bad arrangement is not effected without some inconvenience; but the end justifies and compensates for that. For the rest, short sitz baths, or long foot baths, relieve very much of the nausea and malaise from time to time. As might be expected, these signs are more prominent in old than in young *neuralgia.* But I hold that no *tic* of a fixed kind can be got rid of without some critical action, and that, generally, a bilious outpouring by the mouth and by the bowels, or sweating, or an itchy eruption of the skin: but never boils.*

CASE XVII.—SCIATICA.

This patient is brother of the most distinguished of the metropolitan surgeons, who, indeed, recommended him to come to me for a trial of the water-treatment. He is fifty years of age, a person of most active mind, occupying himself during a long day with matters of grave and complex character, and even filling up hours that are not recognized as those of business with botany, gardening, &c.; in short giving his mind no rest. Withal his position brought him, as host or guest, into not unfrequent dinner-parties, where, though *moderate*, he could scarcely be as *abstinent* as, considering the mental labour and slight bodily exercise he took, he ought to have been. The consequence was, that the digestives began to give way; he fell into ill health; and after two years of dyspeptic disorder, the internal irritation attempted to relieve itself by the production of tic douloureux in the sciatic nerves. He bore this for one year, trying, meanwhile, a variety of remedies, but to no purpose. The pain drew the affected leg up, so that in walking he could not put the flat of the foot on the ground: and it also obliged him to stoop.

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* In his paper on the water cure, in "Colburn's Monthly Magazine" for September, 1845, Sir Edward Lytton says, "that neuralgia is one of the diseases not curable by the water-treatment." Of course, his own experience is very small ground on which to frame this statement, which is altogether incorrect. Had he been my patient, he would have had opportunity of hearing the contrary from one at least of the patients who are the subjects of the following cases. But this is one of several inaccuracies in the paper in question, inevitable by a non-professional person writing on a medical subject.

He had a variety of dyspeptic signs, although want of appetite was not one. But a swollen tongue, somewhat split, inflamed back of the throat, red eyelids, yellow white of the eyes, and general want of activity in the skin, bespoke something wrong at the centre of nutrition; and in that conviction I treated his digestive organs and skin, leaving the *sciatica* to follow in their train. For nearly five weeks he was packed once, and then twice, daily, in the wet sheet, the cold shallow bath, and sometimes the cold dripping sheet after it; he took the cold sitz bath once, and sometimes twice, daily; occasionally, he had a dripping sheet instead of a sitz bath; he drank ten to twelve tumblers of water; took horse exercise; and in diet avoided all hot liquids whatever, taking only cold milk and water, bread, butter, mutton, beef, poultry, potatoes, and rice. After a month of this sort of treatment, and when the tongue had diminished, and the inflammation of the throat much subsided, I began to sweat him and douche him daily; he took the sitz bath daily; the dose of water was increased; and the system was vigorously pushed. Under it, he began to have swimmings in the head, occasionally nausea, and "knocked up" feeling, and his bowels acted for some time irregularly, sometimes torpid, but more frequently relaxed. Such is the outline of the treatment which he pursued to the end of the second month, when all manner of engagements obliged him to leave Malvern, although against my advice. It is proper to state also, that in the course of treatment here, he ran up to London for a few days; so that his residence near me was a trifle under two months. At leaving, I gave him directions to pursue a modified treatment at home. The pain was as nearly gone as possible before he left Malvern. This was in the autumn of 1844, and I heard nothing whatever of him until June, 1845, when the following letter from him gave me his history in the interval, and confirmed the complete success of the treatment:—

"LONDON, *June 15th*, 1845.

"MY DEAR SIR—I always intended reporting to you, sooner or later, the result of my consulting you, of my residence under your care at Malvern for two months, and of my subsequent adoption, to a limited extent, of the treatment you recommended. I might have reported my complete restoration to health and strength some weeks ago, but constant and pressing engagements left me no time to do anything which I could postpone; and furthermore, I thought it would be more satisfactory to see how far I could stand the trial of parliamentary work in London, and not halloo before I was fairly out of cover. I was certainly sent to you, after two years' illness and one year's sciatica, as one of the incurables. My general health improved greatly during my residence at Malvern. I so far lost the sciatica, that, though I only walked with difficulty and considerable pain when I went there, I walked perfectly free from pain when I left. You told me I ought to have remained another month at least, and I believe my cure would have been much more rapid had I done so. On my return home, I adhered pretty closely to your orders as to regimen till Christmas, about ten weeks after I left you, drinking about six tumblers of water per diem, taking a bath in some shape nearly every day, and occasionally a wet sheet under blankets. Though I was never afterwards inconvenienced by sciatica, I was occasionally reminded that it had not been fairly exorcised: but these sensations very gradually subsided. I then occasionally felt lumbago when I got up in the morning to a degree which, in former times, was generally followed by severe shock on a sudden, which laid me on my back for a fortnight; but since I was under your treatment, this has invariably gone off after breakfast in a few minutes' walking—a perfectly new feature in my case. I have gradually resumed my former occupations without inconvenience, with somewhat more indulgence than heretofore in point of hours; and I have gradually dropped into my old habits of living, which were always moderate; that is to say, drinking wine only in company, continuing my five or six tumblers of water in the course of the twenty-four hours, and daily shower-bath, or dripping sheet, when from home, with a dry sheet afterwards. I think I am now, in all respects, as well as I ever was, making a due allowance for a difference of powers between twenty and fifty years of age.

"I am told that a residence at Malvern, free from the cares and anxieties of business, would account for this beneficial change, irrespective of the peculiar treatment I underwent there. That may be; but partial trials of change of air and scene previously had not produced any marked effect, and I attribute my restoration from very serious derangement of the nervous system entirely to the very rational and intelligible mode of treatment adopted by you. You explained the cause of my disorder; you gave me the rationale of your treatment; you stated the effects that you anticipated from that treatment, and those effects resulted. I think it, therefore, sound logic to refer the result to the treatment. Mrs. ——'s* case was most successfully treated, and the effect continues. I think it, therefore, but due to attribute our improvement of condition to your skill; and I have not hesitated, and shall not hesitate to bear this testimony in all quarters. Wishing you every success,

"I remain, my dear Sir,
"Most truly yours,
". . . . ."

This patient remains perfectly well now (July, 1847).

CASE XVII.—NEURALGIA OF BOTH LEGS.

In the summer of 1843, a gentleman of thirty-two years of age, who had formerly been in the army, and had then led a very dissipated life, placed himself under my care at Malvern. He had drank largely of spirits, had passed through the stages of nervous dyspepsia, and was now arrived at a complication of irritated and obstructed function of the digestive organs that was quite lamentable.

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* This patient's lady had been under my care for some minor ailments.

He had also been twice salivated with mercury. His skin, pale as death—his soft, flabby limbs—small, rapid, and compressible pulse—all bespoke the extent of the internal mischief which originated this painful affection of the limbs. These last were racked with pain night after night, notwithstanding enormous doses of opiates; and it was only towards morning that, between them and exhaustion, he dozed for an hour or two. The pain frequently returned in the day; but, oddly enough, he could then suspend it, by tightening a cord round the upper part of the thighs; the pain, however, returning when he slackened it. This was of no use in the night. The pains commenced at the hip-joint; and between that and the ankle, there was not an inch of the limb free from it; and it was of an intensity that made the perspiration stand on his face.

I have said there was a complication of irritation and congestion within, and I therefore treated the case partially for both. He was packed in the wet sheet twice a day for a week! the next week he was packed two successive days, and sweated the third; and this was continued for nearly a month. Meantime, he had the cold shallow bath after each of the above processes; the dripping sheet once or twice in the day, according to the amount of pain; every other night he was fomented on the stomach for an hour at bedtime; he drank twelve to fifteen tumblers daily, and ate sparingly; his exercise was considerable, as the *tic* was quiet for hours together, and did not interfere with his walking. This first month was one of probation to him, for the pains were much increased; but as I had anticipated and told him this, his confidence and patience held out against it. Still, for seven weeks they were severe; in the eighth and ninth weeks they gradually diminished. In the tenth week a most extraordinary circumstance occurred. One night the pains were terribly aggravated—almost as bad as ever; he had shiverings, and felt altogether nervous. After a few hours, this was succeeded by an excessive flow of pale urine, *the pain suddenly ceased, and he never had it afterwards!* I have no doubt that, in this renewed disorder, there was an effort made by the viscera; that effort produced the shivering and nervousness, and resulted in the flow of what is called "hysterical urine." It is quite certain, however, that the cure dates from that day; he never had pain afterwards. It is necessary to state, that during the last five weeks he had been sweated and douched daily, besides a sitz bath of half an hour, and large quantities of water; so that the stimulus of the treatment had had full play. His spirits and general condition had improved, but not sufficiently to satisfy me, and I therefore detained him here a month after the cessation of the pain, and continued the douche and other tonic treatment: but nothing seemed to elicit more pain. I look upon this as one of the best-defined instances of organic effort on the part of the viscera that could be produced, and altogether as an extraordinary case.

CASE XIX.—TIC DOULOUREUX OF THE FACE.

The subject of this case is a military officer, fifty-four years old, of amazing muscular power, which he has always been in the habit of exercising to the utmost in hard riding, hard walking, and athletic exercises. He lived in the usual style of gentlemen of good rank and fortune, dined on a variety of dishes, was fond of all manner of condiments, drank seven or eight glasses of wine at and after dinner, strong coffee, strong tea; but was not dissipated in other respects. A few years back he had some mental distress. What I suspect to have taken place is this: his mode of diet irritated an excitable stomach; his excessive exercises irritated his spinal cord, the seat of the will; the former played on the latter, which was ready to receive irritation, and the nerves of the left side of the face, proceeding from the spinal cord, derived their morbid sensation from it when it was thus exerting morbid sympathies with the viscera. The *tic* commenced about four years before he came to me, and was at first confined to the gum of the upper jaw, left side, but gradually spread to the lip. It very often came without any movement of the lip, or jaw, but was sure to come on with it, so that eating was a serious operation for him. He underwent a variety of treatments for it; and, among others, an attempt was made to separate the nervous twigs of the gum from the main branch of the nerve, by cutting down to the bone. This seemed to take the edge off the pain for a period, but it returned as before. Homœopathy was tried with some success, also;

but several reasons obliged him to give it up. He passed the greater part of the winter, 1844, on the shores of the Baltic, in which he bathed daily. This bathing brought on diarrhœa, and considerable relief, in the midst of which he was called to England; continued his old plan of diet, and soon got the *tic* as bad as ever. He then came to me. All the signs of nervous disease of the stomach were shown in his tongue, throat, eyes, sensations, &c.; but his appetite was good, which, no doubt, was the reason wherefore no restriction had been hitherto placed on his diet, except by the homœopathic physician.

His diet was immediately changed to the simple rule of my establishment; and as his body had been well used to cold water, and was in good condition, brisk treatment was applied at once. He was packed in two successive wet sheets, morning and evening, with cold shallow bath for six or seven minutes after each; and took the sitz bath for three quarters of an hour at noon. He wore the abdominal compress all day, drank fifteen tumblers of water, and walked six or seven miles daily. After a fortnight he took the douche for five or six minutes at noon, and the long sitz bath in the evening, in place of the second packing. Sometimes the packing was omitted altogether for two or three days, and the douche taken twice. This was done in order to give respite from the pain which was roused each time he was laid in the wet sheet. In fact, the phenomenon of increased pain, to which I have alluded in the text, was very palpable in this gentleman, whose excellent re-active power was thus exhibited. However, he was resolute, and did and bore everything he was desired to do, and had his reward, for at the end of *four weeks* the *tic* was nearly gone. He went home for a few weeks, continued a modified treatment, but not the strict diet he had with me, and the *tic* remained just as it was when he left me, now and then "simmering." He returned for a fortnight, took to brisk treatment again, and got rid of the pain altogether. As easterly winds had always aggravated it, I recommended him (it being the month of September) to spend a few weeks at some place on the Devonshire coast, until the middle of October, and then to migrate to the south of France for the winter, so as to *establish* the freedom from pain which his treatment at Malvern had effected. Since he left, he has sent me repeated accounts of himself, each announcing that "all is right;" at which I rejoice, as it speaks of the well-being of an excellent man, and pains-taking patient.*

It should be added, that diarrhœa of two or three days repeated several times, was the only critical action that marked this case.

It must not be expected that all cases of *facial tic* are curable so soon as this. In this instance, much had, no doubt, been done by the previous bathing in the Baltic, and its results in diarrhœa; and the constitution of the patient was excellent. Generally, it requires many months of assiduous water-treatment to undermine this tedious malady; and in many cases it certainly fails, though as often, I think, from the want of patience of the sufferer, as inefficacy of the treatment. Still, it does fail; and the well-known case of a popular nobleman, who was a long time under treatment at Malvern, is a notable instance of this; he was not one jot better. Altogether, it is the most inveterate of neuralgic complaints.

Flying neuralgic pains of the ribs, especially over and about the heart, of the fingers and arms, are always symptomatic of passing increase of irritation in the viscera, and are best treated with hot fomentations to the stomach, cold hip baths, dripping sheets, or foot baths, according to the presence or absence of mucous and feverish signs, the fomentations being most proper when such are present, and the other means if they are absent. In violent fits of *fixed tic*, the fomentations, with copious water drinking the while, are the best soothing remedy, and seldom fail to alleviate, if not put down the attack. And this—which I have proved in a great number of instances—forms a very strong argument for the origin of neuralgic ailments in the viscera. In like manner, *toothache*, which is very often a *tic* of the nerves of the teeth, is relieved by fomenting the stomach, foot baths, and drinking water freely. In all such cases, the relief is owing to the transfer of irritation from the interior to the exterior.

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* I seize the opportunity of bearing this testimony to the fairness and implicit regularity of this patient, who will smile to see it thus recorded. But most military men are excellent patients, and the physician may always rely that his injunctions will be conscientiously fulfilled by them. The same applies to members of the Society of Friends, and, to a great extent, to Scotchmen—all three well regulated classes. They only can know the comfort of having such patients who are troubled by the indolence, caprice, unreasonableness and irregularity of the far greater number, who thereby gain no health for themselves and no credit for the physician.

Neuralgia is for the most part as I have said, a tedious malady to cure. At this moment, I have with me a gentleman who offers another exception to this rule. A few words will tell his case, its treatment, and the result up to this time.

CASE XX.—SCIATICA.

The patient is thirty years old. For five years he has had severe and increasing sciatica of the left side. Resident in Canada, he then underwent all kinds of treatment—mercury, of course, in abundance, and iodine, until his head and face swelled; he was poisoned by it, in fact. Besides this, he had been greatly given to spirit drinking. In November, 1845, he reached England, purposely to try the water cure, and came under my care the latter end of that month. Between his landing and his arrival at Malvern, he was induced, during a short stay with his friends, to try *acupuncture;* but the needles gave him exquisite torture, and considerably augmented the neuralgic pain. In spite, however, of the bad medicinal treatment he had undergone, his constitution, naturally of the strongest, retained a good degree of vigour. Yet to look at him, when walking, bent almost double with pain and limping, one would not have given much for his chances of recovery.

The action of the treatment in this case was immediate. He was fomented at night, and packed in the wet sheet morning and evening for an hour, with a cold shallow bath afterwards. He drank twelve to fifteen tumblers of water, and lived on mutton, farinaceous puddings, bread and butter. After two weeks of this, he was packed in two sheets successively, in the morning, and one in the evening, with the douche for three minutes at noon. He wore a compress all the time. For the first fortnight, the pain was somewhat roused whilst in the wet sheet, but subsided immediately in the shallow bath. In three weeks he felt little or no pain at all, except when he sat down on the floor, and tried to stretch the neuralgic leg out as straight as the other. In walking he felt none, nor was any halt in his gait, or any stooping, perceptible; in short, he declared himself in all particulars well, and that this *sciatica*, which, for five years, had not only resisted all means, but increased notwithstanding them, had in one month yielded to simple water. The last I heard of this patient was, that he was the most vigorous dancer of Scotch reels at a party for that purpose; this was three months after his first coming to me.

Here is another case, which, although the subject of it was not young, was cured in a brief period.

CASE XXI.—SCIATICA.

This gentleman, a solicitor, was fifty-six years old in December, 1846, when he came to me. He had led, generally, the sedentary life incidental to his profession, but on particular occasions, had more than an usual share of exercise attendant on it also. He had lived what is called temperately; that is, he had taken wine freely, but it did not intoxicate him. He was inclined to corpulency, weighing fifteen stone before he came to Malvern, which he left weighing thirteen stone.

The malady commenced in September, 1845, suddenly, and when he was apparently in the best of health. It at first attacked the back, causing lumbago pain, so as to render stooping impracticable. Changing in character from an ache to a sharp kind, the pain extended from the loins into the buttock, and thence into the back of the thigh, and down the leg. It grew worse and worse up to May, 1846, when it drew up and crippled the leg—the right one. At this point he began to use active measures against it; the back and buttock were cupped several times; the vapour bath was used; medicines of different kinds were taken, as were also some medicinal waters at Shap, the quality of which I know not. In July, 1846, he underwent acupuncturation; but neither the needles nor any of the other remedies availed anything.

On 5th of September, 1846, he came to me. After some preliminary rubbing with the dripping-sheet, he was submitted to wet-sheet packing, once and then twice a day, with prolonged sitz baths, and hot fomentations to the abdomen at bedtime. He drank ten or twelve tumblers of water daily; walked as much as his leg would allow him to do. His diet restricted him to the use of animal food four times a week. The sciatic pain was aggravated by these means; for which, at the end of a fortnight, the sweating process, with the douche, and long sitz baths, were substituted; and he continued the use of these daily up to the time of his departure from Malvern, which was only four weeks from his arrival. At the end of the third week, there was some degree of nausea, foul mouth, broken sleep, tendency to diarrhœa, and that general malaise which betokens critical action in the body. It was so with him, though incomplete; for subsequently to this he had but little pain, comparatively speaking. At the end of a month his avocations obliged him to leave Malvern; and he went away armed with instructions from me to practise occasional sweatings, alternating with wet-sheet packings, sitz baths, and now and then a shower bath, for want of a douche. The quantity of water to be drunk was diminished in consequence of the necessity he was under of employing his brain laboriously; with which large water-drinking is always incompatible—dangerous even.

The sciatica finally and entirely left him about Christmas, 1846. In February, 1847, he wrote to me as follows:—

"I have put off writing to you for longer than I intended, and I feel sorry I did not sooner impose upon myself so grateful a task. The day I left Malvern I dined at Worcester, and in walking up and down the streets waiting for the omnibus, I found how much my complaint was gone, to my inexpressible satisfaction. When I got to P——, I was still better, and it has gradually worn away; and I am now as free from it as ever I was in my life; and more, my general health is better and more vigorous than it has been for thirty years. Walking and horse exercise I can go through with more ease and ardour than I could have done for many, many years past.

"When I got here from your agreeable place, I followed up the shower bath once a day—viz., in the morning, and suitable exercise; but I was not able to go through the other processes. I found myself so rapidly recovering that I thought there was no occasion for it. And although you said I should never get quite well without a crisis, I assure you I have done so, and without even a relapse."

(I am not the less convinced that this gentleman had an *incomplete* crisis, as above mentioned. In this month of July, 1847, I hear, through an indirect channel, that he remains perfectly well.)

Of Nervous Headache, the cause is still to be sought in the viscera; and the crises of the water-treatment which effect its cure are all produced in them. Vomiting, chronic relaxation of the bowels, copious and loaded urine, attend its disappearance, but never boils nor irritation of the skin: in many instances the cause of nervous headache is to be found in disordered function of the womb, and especially in excessive or difficult menstruation; in these the stoppage of the excess, or removal of the difficulty, is equivalent to a curative crisis. It cannot be denied, however, that this last class of causes renders nervous headache exceedingly unmanageable, by this, as it is by all other plans of treatment. The uterine organs acquire morbid habits of action, occurring with periodical regularity, and it is difficult to break them. This is more especially the case when, with a proper amount of menstruation, it comes slowly with pain, and is extended over eight or nine days; these cases are often intractable. When the headache is connected with excessive and quickly flowing menstruation, the water-treatment is much more certain in its curative result. Arising from *any* cause, nervous headache, which keeps a fixed period of accession, is much less readily curable than that which is induced at uncertain times by varying perturbating circumstances; once break the period, and you have it under command. And in *all* cases the patient must have patience; like other *tic* diseases (for this is only a *tic* of the scalp) it is very rarely cured by a *coup-de-main:* indeed, the attempt to do so by urging on excessive treatment, more usually exasperates the complaint; the phase of visceral irritation on which it depends is so precise as to require the nicest adaptation of the amount of stimulus applied. Moreover, this is eminently one of those diseases, the relief obtained for which from the water cure is more experienced after that treatment has ceased for some time, than in the course of it.

There is the *occasional* as well as the *curative* treatment of *tic* of the head or nervous headache. To subdue it for the nonce, a cold dripping sheet, well rubbed over the body for three or four minutes, and repeated every two hours or so, is, with some, a good remedy. A cold foot bath for fifteen minutes, repeated every three or four hours, succeeds with others. The cold sitz bath for twenty minutes or more is often successful. Finally, hot fomentations to the pit of the stomach are of the greatest benefit, except when there is excessive menstruation, in which event they are inadmissible. In trying any of the above, it is necessary to drink water more or less freely, according to the fever present, and the mucous symptoms, and to frequently change the abdominal compress. We are often obliged to try one after another of all these remedies. My experience speaks in favour of the foot baths and sitz baths, in the great number of cases: that is, where a tonic effect alone is required. Where, together with the nervous symptoms, there is deficient secretion from the digestive mucous surface, and constipation of bowels, dry mouth, hot breath, &c., attend, fomentations are preferable. The rubbing sheet is for the slighter headaches. But packing in the wet sheet, sweating, and the douche, are not admissible.

The *curative* treatment of *nervous headache* is regulated in the main, by the same circumstances as the occasional. It is necessary to ascertain the amount of secretorial disorder which is added to the nervous; how far mucous derangement, and feverish excitement consequent on it, are combined with the nervous pain; and the condition of the uterine functions. Generally there is much disorder of the mucous membrane in this chronic headache, owing very often to the violent medicines that have been employed against it, and against the constipation of bowels which almost as often attends. In this case, the partial packing with a wet towel twice a day, gradually proceeding to the employment of the sheet, should be used; with the cold sitz bath for half an hour, once or twice daily, the abdominal compress frequently changed, and a somewhat copious use of water. The diet should be chiefly farinaceous, meat being taken only twice or thrice a week, and the exercise should be rather free than otherwise, provided the stomach digests a good portion of food. This sort of treatment should be persisted in, until the reduction of the mucous symptoms, for the most part announced by some internal crisis, is well established. In the course of effecting this, it is more than probable that exasperation of the headache may occur, and especially immediately preceding some crisis of the bowels: for the efforts of the body to that end are all made through the nervous system, which is roused to them by the treatment. Accordingly, when such occur and induce severe headache, the treatment must be relaxed, or suspended for a few days or a week; and the patient may be assured, meanwhile, that the pain is here of favourable augury, certifying the active operation of the remedies. In fact, if the patient is pretty strong, I generally recommend him to bear with it for a time, because a continuance of the nervous excitement, of which it is a sign, is pretty sure to terminate the sooner in critical relief; but this requires discretion. Supposing, then, the mucous and feverish symptoms removed, and action of the bowels obtained, the wet-sheet packing should be discontinued, or only used now and then, as the pulse hardens and quickens from the rest of the treatment. For a tonic and stimulating plan is now advisable: besides sitz baths, the douche should be taken, and gradually increased to several minutes' duration; the shallow bath in the morning should be had for four or five minutes, with considerable friction; foot baths should be taken once or twice a day; the dose of water should be free; a small quantity of animal food should be given once daily, and a good amount of exercise taken. Perseverance in these means at length causes either a diarrhœa, or eruption of an itchy kind, in various parts of the skin, with sometimes a considerable exudation of glutinous liquid under the abdominal compress, which I have found to smell strongly of medicinal substances, long previously taken. But, as I have said, stoppages in the treatment are every now and then necessary and beneficial.

When, with nervous headache, there are signs of obstructed action of the liver, sweating will be required, with still a care not to excite the circulation and nerves beyond the capabilities of the organization, and any feverishness it may beget is to be subdued by the wet sheet. And as regards the *curative* treatment generally, it must be remembered, that when a bad fit of headache is on, it is to be suspended, and the *occasional* treatment already spoken of employed. Scarcely any disease demands more attention of the practitioner, in order to make *minute* changes in the treatment, for the *great* benefit of the patient, than this troublesome form of neuralgia.

Arising from the phase of uterine irritation which begets slow, painful, or *scanty* menstruation, *nervous headache* is treated in a very similar manner to the above. Wet sheeting and prolonged sitz baths and foot baths are the principal remedies, and the douche should not be applied without care; for in these cases there is frequently, besides *tic* outside the skull, some fulness of blood inside of it, in the brain; for which reason, also, the quantity of water should be carefully regulated. But where the pulse does not indicate such fulness, the douche is a very necessary part of the treatment; and, played well on the loins, tends powerfully to facilitate the uterine functions. The diet must depend on the same circumstances of fulness of head, or the contrary. But in either case the exercise should be considerable, for they both differ from the instance of suppressed menstruation from actual bloodlessness, of which I shall have to speak hereafter, and in which much exercise is far from desirable. It is scarcely necessary to add, that sweating is out of the question in the headache from the cause I am now speaking of.

In the contrary case, of nervous headache connected with *excessive* menstruation, the tonic plan, and rest of the digestive organs and limbs, are necessary. In all exhausting losses of blood, nature, in order to save the vital organs of nutrition, concentrates the blood which remains about them, so as to obviate the extinction of the being. Hence, with excessive menstruation, we constantly see inflammation of the stomach coincident; and hence, also, the necessity of avoiding stimulating or copious food, although the body may be drained of blood at the very time. But as food is to be very carefully taken, so exercise should be carefully practised, not only because there is small supply of blood in the system, but because, whenever the will is exerted, as in walking, there is a strain upon the nutritive organs, and consequent increase of their congestion. So that we have abundant reason for very careful dieting and for absolute rest, or at most only passive exercise, in the headache connected with excessive menstruation. Inasmuch, however, as exercise is forbidden, so should the processes of the water cure be of a kind not to require it; and, in fact, those which are found practically to be most efficient, require none, or at least very little, to cause re-action. The sitz baths are very short, varying from two to five minutes each, and taken three or four times a day. I have often prescribed such in the midst of immense menstrual discharge, and always with decidedly good effect; of course they are cold. A minute or two in the duration is of great importance, as, if the patient be in the bath too long, it will rather increase than relieve the evil; and the colder the water the shorter the time. Experience alone of the individual constitutions can afford a just notion of the requisite time and temperature. The cold rubbing sheet is another remedy in the case in question. Water should be drunk in very small quantities at a time, even so little as a wine-glass full; nor should the whole quantity exceed one or two tumblers in the day. The reasons for low farinaceous diet have been given: ripe and cooked fresh fruits may be taken, as also succulent vegetables. Besides the most complete rest of body which is attainable, it is a great point to avoid external heat, and all hot liquids taken internally. Last, not least, as the excitable character of woman is in this malady infinitely augmented, it behoves to withdraw from the brain all subjects which deeply implicate either its moral or intellectual faculties: and, however, distasteful to feminine nobility, the patient must learn to take things quietly. By such simple and negative means as these, I have cured old-standing nervous headaches arising from uterine irritation and hæmorrhage, when all sorts of medicinal and dietetic tonics, opiates, and astringents, had altogether failed.

I have dwelt somewhat at length on this malady, because it is of so frequent occurrence, and because it is not my intention to illustrate its history and treatment by the detail of cases. It is one of those diseases of which it may most truly be said, that no two cases are alike—of which, therefore, no picture could be given, by one or twenty cases, that should be a practical guide; so much does the management of each one depend on small points which appeal to the *intuition* rather than the bare observation of the physician. Meanwhile, it may be confidently stated that *nervous headache* is one of the maladies in which the judicious use of the water-treatment is most effectual.

§ 3. APOPLECTIC FULNESS OF THE BRAIN—CONGESTION OF THE BRAIN—PALSY.

In the preceding nervous complaints, the diseased circulation of blood in the substance of the nerve-matter was not of a character to disorder its function by *obstructing* it: neither have we *direct, tangible* evidence of excess of blood in it as the essential of their presence, although, reasoning on sound physiological grounds, the inference is inevitable. In the disorders which head this section, however, there is every evidence that excess of blood, in a varying degree of *stasis* or congestion, exists—a congestion tending to impede the office of the brain and spinal cord, and their commands to the muscles of voluntary action.

The manner in which *apoplectic fulness and congestion of the brain* are generated, has been already sketched (page 20). Originating in stomach irritation alone in the first instance, it is a simple extension thence to the brain; but when mental causes have been at work, the shock or strain on the mind's organ, the brain, is reverberated in the digestive organs: an irritation is set up there, plays upon the already predisposed brain, and thus chronic fulness of the latter is established, which, as might be expected, is of a more inveterate character than when the fault is all in the stomach. The man who has few mental cares or toils, but who gives his stomach a great quantity of work, will get his head too full of blood, and the fulness will be, in the great majority of instances, of the *apoplectic* kind; whilst he who drudges with his head, swallows his food without chewing, or eats very little, and perhaps takes stimulants to carry him on in his labours, will have fulness of the head too, but it will be of the *congestive* kind. The difference between these two is, however, in degree only; and the patient sometimes passes through the apoplectic, and subsequently reaches the congestive stage. In both, the blood-vessels of the substance of the whole brain contain too much blood; but in *apoplectic* fulness they still retain a considerable amount of their vitality and contractile power, and there is not only too much blood, but it is passed through it with augmented rapidity. In *congestive* fulness, on the other hand, the blood-vessels have lost their tone more completely, and the blood is not passed on rapidly. But as the distinctions between these states have a most important practical bearing, I will endeavour to render them clear by placing them in a tabular form:—

APOPLECTIC FULNESS	CONGESTION OF THE HEAD.
Occurs in persons having a general fulness of blood, and who make that fluid rapidly; who have great	Persons of meagre habit and extreme nervous action, both of mind and body, whose tendency

APOPLECTIC FULNESS.

appetite for food; and in whom there is often hereditary tendency. *Causes* are, excessive feeding, stimulating diet, alcoholic fluids, want of exercise, long sleep, hot rooms, sensual indulgence; tonic medicines, especially iron waters.

Symptoms are, turgid and red, or puffy and pale face, projecting eyes, greasy skin of the face, whizzing noise in the ears, flashes of fire before the eyes, giddiness, and tightness of head; sometimes very bad headache, fiery red throat, furred and red-tipped tongue, feeling of choking about the throat; thirst, great appetite, constipated bowels, but largely opened when they act, and of dark colour; urine scanty and high coloured; seldom any pain or other sensation in the abdomen; tenderness at the pit of the stomach occasionally; breathing strong and wheezing, pulse large, hard, throbbing, rather slow, frequent palpitation; strong tendency to sleep, great impatience and irascibility, restlessness of mind as to subjects; hot skin and small susceptibility to external cold.

CONGESTION OF THE HEAD.

is to keep both on the stretch, and eat not in proportion to the waste incurred, are the most subject to this state. *Causes* are, excessive action of the brain and spinal cord in mental excitement and venereal pleasures; alcoholic stimulants, and small quantity of, or improper food, being taken at irregular times, and eaten quickly; tea, coffee, and other hot liquids; want of natural and regular sleep; tobacco smoking and snuffing; losses by purging, bleeding, and urine; mercury and iodine.

Symptoms.—Colourless or dirty-looking and anxious face, eyes sunk, humming and singing noise in the ears, dulness of hearing and sight, the latter being often clouded by a cobweb or dark spots: giddiness and faintness, sense of weakness in the head, red and swollen tongue, relaxed throat, no thirst, appetite often small, more or less distress after eating, bowels constipated, but quantity to be evacuated small, urine copious and clear, especially at night, nocturnal emissions; breathing weak and slow, sighing or yawning, pulse small, soft, and often slow; but little sleep, and broken and dreamy; mind depressed and moody; no desire for exercise, and the limbs soon tired; skin cool and bloodless, feet icy, great susceptibility to external cold.

These are wide differences, and fatal ones, to those who treat a name instead of a condition, who would bleed, or otherwise reduce, for a "fulness of the head," without inquiring whether that means "apoplectic" or "congestive" fulness: many is the unfortunate, it is to be feared, who has passed out of the world after a bleeding, who might have been kept in it with nutritious food, and rest of the nervous centres. But although the causes and symptoms, and, as will be presently seen, the treatment of these states differ, they nevertheless tend towards the same end, if left to themselves. The fulness constituting the apoplectic tendency terminates in *sudden* pressure or effusion of blood on the brain, with apoplectic stupor; and the patient either comes out of this with more or less palsy, or dies, the palsy sometimes gradually disappearing. In the fulness which I have called congestive, the enfeebled and gorged blood-vessels of the brain *gradually* press more and more upon its matter, oppress its function, and finally induce *palsy* of more or fewer muscles, but without any such suspension of consciousness as that which attends *apoplexy*.

Thus, then, the matter stands:—in *apoplectic* fulness, there is excess of blood in the body generally, and in the brain in particular and *à fortiori;* for, even in health, that organ receives one-fifth of the whole blood of the body. The vessels of the brain not only contain too much blood, but that blood is circulated with a rapidity and force, that render sudden extreme pressure or rupture of them very probable. Moreover, the body is in a high state of nutrition, the blood-vessels themselves are highly nourished, and therefore, although containing too much fluid, have not so much lost their contractility, and are not in the state of extreme and atonic relaxation, as in the congestive state. Accordingly all the phenomena are those of excessive action, as will readily be seen in the above tabular view. In *congestive* fulness, on the other hand, there being rather a paucity than an excess of blood in the entire frame, nature, acting by her invariable rule, sends the greater portion of it to the centres of life in the stomach and the brain. But as, in that case, nutrition of the blood-vessels is below par, they offer little vital contractile resistance to the blood that oppresses them, and the circulation in the brain is thus enfeebled, stagnant, congestive, with slight chance of causing sudden, but with every probability of inducing gradual, pressure of the organ. The same deficient nutrition obtains in the heart, which therefore fails to drive the blood to the head vehemently: and thus, between the deficient blood, its congestion in the brain, and pressure on its nervous function, and the general deficient nutrition as a consequence of both, the phenomena of this congestive fulness of the head are those of enfeebled action, as the table exhibits.

In a patient, suffering with apoplectic fulness of the head, whatever *suddenly* reduces the general and local repletion, large blood-letting, purging, sweating, or the immediate and complete withdrawal of all stimulus of food, is apt to cause a transition from that kind of fulness to the congestive. The rationale of this is sufficiently obvious from what precedes: the sudden reduction of stimulus, and of the vital fluid, takes from the vessels of the brain their contractile energy, whilst the same reduction causes an undue proportion of blood to centre in them, and this excess and their relaxation constitute the congestive state. This is constantly occurring in consequence of the rough practice so commonly employed against what is called "determination of blood to the head." But, without that, the same transition is liable to take place. If apoplexy does *not* happen, the rapid action of the digestive organs at length passes into feverish action, the appetite diminishes, the blood wastes without being renewed in proportion, and the vessels of the brain undergo the same change as if sudden reduction had been effected. If apoplexy *does* happen, the means usually taken, and the starvation that follows the attack, serve in like manner to convert the apoplectic into the congestive state. Now, this transition state is often presented for treatment, and requires considerable acumen, both to detect and to treat—to steer between the tonic and the depleting plans. The enumeration of symptoms already given will enable the practitioner to ascertain the preponderance of one or other condition, and his remedies must be applied accordingly.

When the state of *apoplectic fulness* is to be combated, we must have recourse to the *lowering* processes of the water cure. Hot fomentations to the abdomen, the constant wearing of the abdominal compress, packing in the wet sheet, the long sitz bath, low diet, and strong exercise, require to be used. But the temperature of the fomentations should be regulated by the pulse; if this be *very* hard and bounding, they should be moderately hot, and may be increased in heat as the pulse becomes softer. The wet-sheet packing, too, must be regulated by the pulse and the sensations in the head; and the patient ought not to remain more than thirty or forty minutes at a time in it, if the former be very hard, and the latter distressing from giddiness, great noise, &c.; it is well, also, to have a cold wet cloth on the head whilst in the sheet. In the cold shallow bath which follows it, the head should be first wetted, and a pitcher of cold water poured over it; and this should be repeated twice or thrice during the bath. The frequency of the sheet will depend on circumstances to be mentioned presently. It is as well to commence the sitz bath at about 60° or 65°, and gradually reduce it: the duration of it should be from thirty to forty-five minutes, and a cold wet cloth should be worn round the head whilst in it. The diet should be greatly predominant in vegetable matters, animal food being taken only twice, or at most thrice a week, and of some of the least stimulating kind, such as chicken. And as the object of such diet is to reduce the quantity and stimulating quality of the blood made, so is the strong exercise intended further to waste it as it is formed. There can be no doubt that the bulk of circulating fluid adds to the laborious character of the circulation, and also quickens the activity of the functions—of the nervous particularly: and on both these accounts it is desirable to avoid much water drinking in this kind of fulness of head; in fact, except to quench the thirst, the less water is drunk the better.

These means fulfil the intent of reducing the mass of blood generally, and in the head in particular. But a body in this state must not be rudely handled by the water plan, any more than by the medicinal plan. If it be attempted to *hurry on* the process of reduction, one of two things is liable to happen: either the frequent processes *excite* the nervous system, before the quantity of circulating blood is reduced, and thus endanger the brain that is the subject of treatment; or, the reduction being *suddenly* made, the apoplectic is changed for the congestive state, by the means already stated. So that the more full the head, the more carefully should we proceed in the endeavour to empty it: in this, as in so many other instances, the physician's best part is patiently to watch nature's steps, and have a care not to exceed or hasten them; the circulation should be carefully watched, and any the least augmentation of it, in the form of nervous pulse, or any other nervous sign, should immediately make him pause for a time, and relax the treatment. The pulse should be examined daily, before and after the wet-sheet packing, and the quantity and frequency of the latter regulated accordingly: few will bear more than two packings in the day; most persons not so many. Fomentations, also, if too hot, or too often applied make the head throb instead of quieting it. Both these being powerfully and positively lowering remedies, aid the negative depletory measure of diet recommended; and if all be judiciously employed, they form the most certain means of permanently relieving the apoplectic head—the long sitz baths, meanwhile, drawing the blood downwards from it.

Under the most favourable circumstances, however, nervous signs appear in the course of the treatment; indeed they are indicative of the passage of the cerebral fulness from the stage of oppression to that which is coincident with *irregular* function of the brain; but if the tremors, fears, &c., are very distressing, all that is required is to relax or suspend the treatment for a time. The sleep, too, from being excessively heavy, becomes broken and dreamy: this acknowledges much the same cause as the nervousness, but needs not any great attention. As the brain empties, the circulation in it becomes more steady, and all these symptoms dwindle down into quietude. One striking fact is, that, whereas the patient had never before experienced any dyspeptic uneasiness in the stomach, he now, as the head becomes more light and easy, for the first time discovers that his food disagrees, by a sense of heaviness, distention, &c. This is explained by the oppressed state of the brain, which had previously rendered it insensible of the irritation going on in the digestives, whose morbid sensations come to be appreciated when the brain is recovering its activity, by the withdrawal of the load which oppressed it. Much grumbling do patients make at this, to them, new symptom; but they should welcome it, were it for no other reason than that it lays open to them the origin of their perilous malady of the head in the digestive organs, and tacks a dietetic moral to the history of their complaints.

In *congestive fulness of the head*, contrary indications of treatment are presented to those just considered. Here the object is to give *tone* to the blood-vessels of the body generally, and of the brain in particular, so that these last may contract and rid themselves of the load. As in all exhausted states of the nutritive organs, so in this there is congestion of the digestive apparatus, as well as of the brain; hence the imperfect digestion and blood-making, and the want of tone in the solids. To relieve the congestion of the apparatus in question—to obtain good blood from better digested food—becomes, therefore, the primary means of giving tone and contractile energy to the blood-vessels; and whilst blood is thus being made, a simultaneous aim should be to distribute it equally to the surface and the interior, and thus to free the latter from its excess.

For these purposes, in a case of pure congestion of the head, rubbings with the dripping sheet should be first used several times in the day; then the cold shallow bath every morning, with one or two sitz baths of ten minutes each daily; foot baths of eight or ten minutes, at any time of the day, are desirable; the compress should be worn all the day, and changed three or four times; the quantity of water drunk should be very gradually increased, until it reaches eight or nine tumblers daily. The diet, meantime, should be such as nourishes, without offending the stomach by its bulk; and therefore bread, the highly nutritious farinaceæ, and meat, should chiefly form it. Nothing is so bad for the stomach of one with congested head as large masses of vegetable food: they distress and oppress that organ, and heat of head and harass of mind immediately follow. Moreover, as the object is to restore tone to the blood-vessels, the diet which contains the greatest amount of nutriment, without being actually irritating, is the best, affording as it does the most nutritive blood. The duration of the above treatment will depend much upon the re-active energies of the patient, which, in this malady, are often at a low ebb. But when, from the pulse, the skin, the sensations in the stomach, &c., it is inferred that the congestion about the stomach is diminished, and the powers of nutrition increased, the treatment may be augmented in proportion. The shallow bath should be extended in time, and more effusion on the head and more general friction practised; the sitz baths may remain as before, unless there be great constipation, when they may reach twenty to thirty minutes. Cold spinal washings for three or four minutes, once or twice a day, may now come in advantageously, forming a kind of step towards the employment of the douche on the spine. It may be expedient, also, at this period, to substitute a small douche for one of the sitz baths, and gradually increase the length of it; and when the patient is able to take it for two or three minutes, to submit him to a larger and heavier douche. The foot baths will be found still of much use; they relieve the tightness, the darting pains, the fixed headache, and the fidgety state of mind, which so commonly attend cerebral congestion. Bad sleep, another accompaniment, may be often cheated by a short sitz bath at bedtime. In case of intense distress, or even pain at the pit of the stomach, fomentations of moderate heat over that part are useful. The pulse being very small and weak, the skin cold and very inactive, and the tongue moist, it is necessary to put the patient in the sweating process now and then—twice a week, perhaps. As the object of this is only to give some artificial aid to the efforts of the interior organs to send their blood towards the exterior, and to rouse them generally, the appearance of moisture on the skin is sufficient evidence of such efforts having been successfully made; and it is unnecessary, and indeed would be harmful, to urge the process further. But in some cases it is not needed at all; and when it is, a prolonged cold shallow bath should succeed it. All these means require to be modified in period and duration, and sometimes to be suspended, when there is reason to think that they are too much for the re-active power of the system. In no diseases, so much as in these head affections, is it requisite to calculate the capacities of the body, so that no remedy shall oppress, instead of aiding them in their strivings towards restoration; and in no way can this be so safely done as by commencing very gently with the minor tonic appliances of the water cure, and as gently increasing their strength, until the frame re-acts healthfully upon a long application of the douche, or a shallow bath of six or seven minutes' duration. Should the efforts of the body, at any time during the treatment, generate feverishness of mouth, pulse, &c., a towel or partial wet-sheet packing may be necessary; though, as a continued remedy, it is not indicated.

The amount of water to be drunk is a nice matter in this disorder. Connected, as it for the most part is, with intense *nervous dyspepsia*, large quantities of water are inadmissible, especially in the onset. As the circulation and blood-making improve, the quantity should be gradually increased. Further, it often happens that the shock of half a tumbler of water, cold from the spring, upon the stomach, produces immediate tightness and pain in the head, particularly at the early stage of the treatment; and I have found all inconvenience of this sort obviated by the simple contrivance of raising the temperature of the water to 60°, until a better state of things is established. Very heterodox this, I suppose, with those who follow the German track, and cannot think for themselves; but it is good policy, notwithstanding, to avoid disagreeables, even though the road be thereby made somewhat longer, of which I am by no means sure in the present instance.

A similar rule of gradual increase applies to the *exercise* of patients with congested head: the reason for which has been more than once given in preceding pages. As the blood-vessels of the brain and spinal cord gain in tone, and the whole circulation improves in strength, the amount of active exercise may be augmented; but at first it should be as small as may be, or even confined to the passive kind; generally, horse exercise is the best.

With these indicia regarding the treatment of the two kinds of brain fulness, it is unnecessary to enter upon that which is fitted for the state that partakes of both. I have had such under my care, and have found it a most difficult thing to manage, as may be imagined, when it is considered that the blood-vessels are in the *mezzo-termine* between excessive and deficient nutrition, and when that which is adapted for one is unfitted for the other. The general plan in these cases is, to use the wet-sheet packing alternate days with the shallow bath, and to have the sitz baths daily; inclining, upon the whole, rather to the tonic than the lowering applications; with, perhaps, the exception of the diet, which should be rather on the side of fasting than feasting. For the rest, the physician must exert his power of discrimination: and, doing so, he will find this mingled form of brain fulness a much less tedious malady than the purely congestive state, though more so than the apoplectic. Indeed, pure atonic congestion of the brain is, in its treatment, one of the most trying things, both to the patience of the doctor, and the faith of the patient. Yet it is one of the most common in this land of anxious heads, and aching hearts, and sordid scrambling.

CASE XXII.—APOPLECTIC FULNESS OF THE HEAD.

The patient is a gentleman of forty-six years, who for some years had done all he could to fill his body generally, and his head in particular, with blood; he had eaten and drunk more than was good for his body, and not had care and anxiety of mind enough to mortify it. He had been plentifully bled, purged, blistered, &c., but the causes had not been removed; therefore all these means were unavailing; on the contrary, he had been ordered by his medical attendant to take first one pint, and then one bottle of sherry daily! He came to me, weighing nearly seventeen stone, although a short person, with a turgid face, bounding pulse, fiery red and furred tongue; his sensations of pain, giddiness, swimming, &c., in the day, were bad enough; but it was at night that his chief miseries came on. He got to sleep well enough; but horrid dreams presently began, with startings and nightmare,; he awoke biting his tongue, with the saliva pouring from his mouth in large quantity, numbness of the limbs, and fear of immediate annihilation. In the day, too, there was frequent numbness of one or more limbs. Altogether, his life was one of fear and misery, and of unquestionable peril, for apoplexy was imminent, and might take place at any moment.

As he lived only five or six miles from Malvern, he proposed to come and see me frequently, and carry on his treatment at home. This was not very prudent; but relying that he would strictly follow my directions, I consented to the arrangement. I ordered the wet-sheet packing once a day, with a cold shower bath after it. He wore the abdominal compress; the water he drank was not to exceed five tumblers daily; his diet was reduced to a small quantity of animal food every other day: bread and butter, farinaceous puddings, green vegetables, and water—nothing more. He took abundance of exercise. He came to see me several times, and announced a calmer sleep altogether, though still much disturbed. He got to take two wet-sheet packings in the day, and fomentations at night for an hour. The bowels were becoming relaxed, and the kidneys were acting with extraordinary energy, although when he came to me, a tea-cup full of blood-red urine was all he passed in each twelve hours. He was thinning under these excretions and the diminished supply of stimulus and food; still he was nervous and hypochondriacal, and gave signs which showed the congestive fulness of the head had been established. It was plain that the lowering process was going on too fast, and I therefore diminished the whole treatment, and the quantity of water especially. He went away, and I saw nothing more of him for four or five weeks. At the end of that time I rode out to see him, and was astonished to find a perfectly *lean* man, with abundant wrinkles, where all had been to the last degree turgid. In fact, he told me that, from the time of his first consulting me to that date—about nine weeks—he had positively lost five stone weight. He further told me that, after last seeing me, he had gone on packing and fomenting at the rate of twice a-day, had taken an enormous quantity of exercise, and drunk an enormous quantity of water; that, in short, as regarded this beverage, he had become infatuated, just as drunkards are with alcoholic drinks; that he had got up at night, when not thirsty, to take it—an irresistible desire for it, as for a stimulus, seizing him; and when his wife remonstrated with him on drinking so much, he had even taken it furtively, unknown to her, and that the fear of my interfering with it had prevented his coming to see me. Meantime, however, his nights had materially improved; the nightmare was gone—the startings almost so; he rarely bit his tongue, and the nightly salivation had stopped. The bowels and kidneys had continued to act briskly, and his appetite was great. But his hypochondriacal state had very much increased, and his nerves were quite shaken. Warning him on the folly of what he had been doing, I desired him to leave off all treatment except the shower bath in the morning, to take as little water as possible, to enter upon a full animal diet, to walk less, and to amuse his mind by travelling about. He did so, and gradually got round; but it took nearly twelve months to recover his nervous firmness. Recover it he did, however; and at this time, more than two years since he consulted me, he is one of the healthiest men alive, without a single bad symptom about the head, or any other organ, weighing between twelve and thirteen stone, eating as others do, drinking two or three glasses of wine occasionally, and a tumbler of bitter ale every day.

The rationale of this case and its treatment is as follows: —The patient, instead of allowing me to see him frequently and judge of the progress of his malady, took upon himself not only to continue, but to increase the amount of treatment prescribed by me. The continued packing, the low diet, the excessive exercise, and, above all, the enormous quantity of water he drank (fifteen and eighteen tumblers daily) all conspired to quicken the process of waste in the body much more than was proper. In fact, this waste was so great as to require constantly the stimulating power of the water, to which he had recourse in the manner I have described. The too rapid declension of the body thus induced, proved a shock to the nervous system, enfeebling it, and bringing about the hypochondriacal state alluded to. The same declension of organic vigour drove the brain from the apoplectic into the congestive state, the utmost amount of relaxation having possession of the cerebral blood-vessels. So that when I saw him after an absence of several weeks, what his nervous and other organs wanted was, rest from excessive action, and tone, as I have already laid down, as essential for congestion of the head. The patient, accordingly, took a shower bath daily, more and stronger food, less exercise, and very little water, adding to those the genial tonic of change of scene and circumstance. Having a good constitution to go upon, this succeeded, although it took a long time. Had he been guided by me from the beginning, seen me oftener, and his symptoms closely attended to, and his treatment modified according to them, he would have reached the point of health he now possesses without the peril and disagreeables he passed through. But whilst this case shows the danger of using the water-treatment without advice and discretion, it also exhibits the very great power it includes of permanently reducing a condition of brain, which all other modes of treatment only relieve for a brief period, and which in this case had not been relieved, even for a short time, by any of them.

CASE XXIII.—APOPLECTIC AND CONGESTIVE FULNESS OF THE HEAD—DEAFNESS—INTENSE HEADACHE.

For several years a lady, of forty-eight years of age, had been subject to most distressing and alarming head symptoms; intense prostrating headaches; giddiness that caused her to reel; bursting sensation of the skull; violent and irritating noises constantly in the head. To these were added, great nervousness, bound bowels, scanty urine, constant feverishness, vehement flushings of the face, ice-cold feet. The pulse was large, but yielding and most irregular; appetite small; sleep very much disturbed. She had undergone violent medication at the hands of the first metropolitan and provincial authorities, whose object appears to have been to drive powerfully from the head, by such remedies as five grains of calomel at night, with some drastic draught in the morning; whilst little attention seems to have been given to the diet. However, between the original malady and the excessive irritation set up by the medicinal treatment, the nerves, both ganglionic and cerebral, and their centres, were in the most alarming condition.

All the symptoms evidenced that middle state of the cerebral blood-vessels which I have mentioned as the transition from the active fulness of apoplectic, to the totally passive fulness of congestive disorder, and to the difficulty of treating to which I have alluded. Accordingly, I commenced the treatment very carefully. The details are as follows:—

August 1st.—Hot fomentations to the abdomen for an hour at bedtime; the flannels changed every ten minutes, and a wine-glass of cold water drunk at each change. Damp compress on the bowels, to be worn night and day. From three to four tumblers ef cold water during the day, to be taken in small quantities at a time. Breakfast of cold toast and a little butter; no liquid whatever. For dinner, three ounces of animal food—mutton, beef, poultry, and game, three times a week, with as little liquid as possible. On other days, the dinner to consist of a cup of cocoa, with cold toast and butter; or of some farinaceous pudding, eaten nearly cold. Very weak, and almost cold black tea in the evening, with cold toast and butter. The pulse becoming less hard and bounding under this, I proceeded with more decided treatment.

4th.—Packed in wet sheet for an hour before breakfast. Dripping sheet after it. All the rest as before.

5th.—The same, except that the shallow bath was used instead of the rubbing sheet after the packing. The patient remained four minutes in it, was well rubbed, and had water repeatedly poured over the head.

9th.—Sitz bath at 70°, for a quarter of an hour at noon, was added to the above. Did not agree; headache came an hour or two after it.

12th.—Packing and shallow bath before breakfast; a foot bath of cold water, with some mustard flour in it, for ten minutes, twice in the day; fomentations at night; abdominal compress; three to four tumblers of water. This was the treatment up to the

27th.—The head suffering a good deal; ordered foot bath of mustard and water; also that the nape of the neck should be rubbed for fifteen minutes with the same mixture. Head immediately relieved. This instead of the packing.

28th.—Packing as usual. Three foot baths in the course of the day.

September 2nd.—Pulse considerably reduced by the long-continued packing, fomentations, &c.; somewhat inclined to hysteria too. Nervous headache. All these signs indicated that the lowering process had, for the present, been carried as far, or at least as fast, as the system could bear. Therefore, on the

3rd—I only ordered the cold shallow bath before breakfast, with the foot baths as usual.

4th.—Shallow bath on rising; foot baths as usual; sitz bath at noon for half an hour. Rode out in a wheel-chair at two o'clock for an hour; came home and vomited copiously until five o'clock. Here was the beginning of an *internal crisis*, which the packing, fomentations, &c., by removing the irritative state of the internal organs, had enabled them to effect. The nervous condition of the 2nd, was the symptom of the commencing effort which terminated in this manner. The matter vomited consisted of a large quantity of clear frothy mucus, mixed with an equal quantity of a black, tenacious, and heavy substance. A cold sitz bath for a quarter of an hour after it, and fomentations at night, removed all traces of the emetic tumult.

5th.—Shallow bath in the morning; foot and hand baths three times in the day; sitz bath for half an hour at noon, and a quarter of an hour at five P.M. Discharge of blood from the bowels in the morning—another character of the internal crisis. Head altogether free from pain: and she said she felt lighter and better than she had ever done.

6th.—Treatment as above. Fomentations at bed time; walked more than half a mile steadily; much better to-day. In the course of the night colicky pains, followed by free diarrhœa, the bowels acting twice.

7th.—Treatment the same. Walked; and then drove out for an hour. Felt better than she had done from the beginning.

8th.—Nothing but the shallow bath. But as she became languid from going to church, she took a foot bath, which soon restored her. Quite well in all other respects.

10th.—Some little feverish disturbance induced me to order a packing to-day. Foot, hand, and sitz baths as before. Head became bad from too long drive. Fomentations at bedtime.

11th.—After a good night felt well; ordered foot baths. Suddenly seized with copious vomiting and purging. Took sitz bath after them, and went out quite well.

13th.—Walked out twice, and drove once. Packed in the morning in wet sheet. Two sitz, and two foot baths, and several hand baths in the day. A considerable quantity of blood passed from the bowels.

15th.—Sick again.

19th.—Head for the *last* week perfectly well, and admitting of a good amount of exercise. This day, however, she overdid it, and the head became bad in the night. Had not packed for three days, but, on account of the increased headache, she on the

20th—Packed; did not walk out at all; took one foot and one sitz bath, and a drive.

From this time to the 24th, when this patient left Malvern, she continued to take the shallow bath in the morning, two foot baths, and two hand baths. Throughout the latter month of the treatment, the vomiting and purging, with occasional discharge of blood from the bowels, continued in varied degree; but I have only noted the days when either of these was excessive. Fomentations were frequently employed at night for twenty or thirty minutes, according to the transitory condition of the head; when it was worse, with increased strength of pulse, they were used; when it was bad, without that sign, additional foot baths and sitz baths were beneficially taken.

This lady left Malvern on the 24th September, taking with her the following directions to be pursued at home:—

"Shallow bath at 58° every morning for two minutes.

"Two foot baths of ten minutes each in the course of the day.

"A sitz bath at 65° for half an hour every other day at noon, or at any time three hours after a meal.

"Wear the compress all day.

"It would be well to pack in the wet sheet once a week or so, with the shallow bath as above; but if all is right in the head and bowels—that is, if the head is free from heat and pain, and the bowels sufficiently open—omit this.

"Vegetable diet except three times a week, when animal food may be taken at dinner."

The deafness with which the patient was affected varied in the course of her treatment at Malvern, but, on the whole, diminished so much that, by the time she left, she could hear perfectly well, if too many voices were not crossing each other at once. Perseverance in the above directions at home completely removed it.

It should be recalled that, previously to trying the water-treatment, this lady, whose position in society is high, had been rendered incapable of entering it; the excitement of the smallest *réunion* was too much for her head; besides which, the headaches were so frequent, and so intense, that she could form no engagement with the smallest certainty of being able to fulfil it; withal, her increasing deafness was daily rendering society impossible and distasteful to her. Neither could she find pleasure in travelling; for ten or twelve miles, in the easiest carriage, was more than she could bear in one day. But after going through the above treatment all this was changed. Her headaches had gone—gone so far, that between September, 1844, when she left Malvern, and May, 1845, when she returned, she had not more than three attacks for a few hours (induced by mental excitement), and of a vastly mitigated character, instead of one or two bad attacks every week, and more or less of it every day. The restoration of her hearing was her restoration to society. And the *certainty* she had that, at any time when the head had been tired by talking and listening, she could put herself to rights with a wet sheet and a foot bath, rendered the life worth possessing which had been for a long time previously intolerable. In this altered state of circumstances she passed through the winter of 1844–45. In the month of May of the last year, a considerable amount of mental excitement, experienced while undergoing the physical excitement of travelling from place to place, added to irregularities of times of eating inseparable therefrom, brought back some of her ailments; that is to say, some degree of flushing, and a considerable degree of *deafness;* in all other respects she remained well, showing the partial character of the mischief. Still, the causes had been re-applied, and the effects were inevitable; and I therefore recommended her return to Malvern, for a short course of more active treatment. Into this I need not enter; it was as nearly as possible the same as on the former occasion, allowance being made for the safer condition of the brain, and the consequent possibility of carrying on the treatment more fully at once. Assiduous wet-sheet packing and fomentations soon brought on the vomiting and diarrhœa as before; the *deafness* disappeared still more suddenly than in the previous year, and in every other particular her state has been one of health since. Constantly taking medicines for years, she has not taken one drop or grain of any sort of physic from the time she came under my care, nearly eighteen months ago. Undoubtedly, being of an excitable and anxious nature, and of a family with tendency to cerebral fulness, she will be obliged to *ménager* her nervous system. However, she is able to visit and receive company; she enjoys life, and is free from all chance of apoplexy; none of which points she could attain under the medicinal plan of treatment to which she had been so long subjected, but the enjoyment of which she now owes to the water cure. It is very satisfactory to be able to add to this case the following letter, received from the husband of the patient, in January of the present year (1847):—

"I am truly happy, at the commencement of the present year, to be able to tell you that, during the space of the last eighteen months, my wife has been in the enjoyment of good health, thanks to your kind and judicious treatment, by your excellent hydropathic system. She has been seventeen years married, during which time I never knew her to be even tolerably well, and latterly she had been getting worse and worse, with constant pains in her head tormenting her by day, and depriving her of rest by night. At whatever place we visited, we were obliged to call in medical advice; and I may say she had the first in and out of London that could be obtained. Some of them attributed her complaint to one thing, some to another; there was no end to the application of leeches and blisters, and her inside was literally inundated with a variety of medicines, till she was visibly about to sink under her complaint. When I took her to Malvern, such was her distressing state, that though the distance from my home is only thirty-five miles, we were obliged to stop a night on the road. A two months' residence at Malvern under your care worked wonders, and now enables me to say that she has been ever since, and still continues perfectly well, is quite free from all pain, and is able to eat, drink, and sleep as well as any one could desire; and our neighbours, who knew her former state, look at her with perfect astonishment. From the time she first commenced your treatment to the present, she has not had recourse to any medicines or professional assistance whatever. I cannot, however, conclude this letter without expressing to you my unbounded admiration of your skill, and my sincere gratitude for the very great and kind attention which you bestowed on my wife's case; and my earnest wish is, that you may prove equally successful in every other case that may fall under your charge."

One of the accusations against the water-treatment is, that it is apt to produce fulness of blood in the head, and apoplexy. This is said by persons who have *no* experience whatsoever of it—who have never seen a single case of any sort treated by it. I, who have treated disease in no other way for the last six years and a half, find a very different result of *large* experience; and, were the choice given me of diseased conditions, wherein I could produce the most certain and satisfactory effects, and show in the clearest manner the *safety* and *speedy* efficacy of that treatment, I should, beyond all comparison of cases, choose one of apoplectic fulness. The patient is full of blood, has good re-action, can take exercise, and there only remains to reduce irritation of the digestive and cerebral organs, irritation, too, of the most tractable kind; all these render it one of the easiest and most satisfactory cases to treat, and any one who knows aught of the water-treatment knows this.

As I have already said, pure *congestion of the head* is a much more tedious malady to overcome than apoplectic fulness. In fact, so tedious is it, so constant is the necessity for watching the case, and in some particular or other changing the treatment, adapting the kind and amount of the remedies to the varying capabilities of the patient, that to give cases of its treatment in written form would be all but impossible. The temperature of the day, the state of the barometer, the quarter of the wind, are all circumstances which, influencing the patient's physical powers, influence all the management of his physician. Being also a condition which is very gradually established, it is of a very chronic character when fully formed; and its treatment is measured by months and sometimes by years, so intractable is it in its greatest degree. It is, unhappily, far too common a complaint in this country not to have been often presented for treatment at Malvern; but, to speak truthfully, out of sixteen instances of it which have been under my care, I cannot vouch for perfect cure in more than one fourth of them; of the others, five were able to remain here long enough to obtain considerable benefit, but no longer; three only could remain, and were sanguine enough to expect restoration in three or four weeks; whilst in the other cases I found the organic energy of the digestive, as well as the cerebral blood-vessels, too much exhausted for even amelioration, and very soon gave them up. Still, connected as congestion of the brain is with old-standing irritation of the viscera, I look upon the careful application of the water plan as the most efficient that can be employed, from its great characteristic of saving the viscera. For a like reason, negative remedies are indispensable; rigorous, though not necessarily low diet, is of very great importance, and abstinence from mental labour and excitement not less so; —conditions which many are not able to fulfil, through the necessary length of the treatment. Without, however, a resolution to deal fairly by the stomach, and to give the brain all possible rest, the wearied blood-vessels of neither can be restored, be the water cure ever so skillfully administered. Let no one, then, attempt the latter, unless he is prepared honestly to aid it by the former. As regards the water cure in this diseased state, it has been already intimated that its tonic appliances are those principally demanded, with certain modifications, under circumstances that are mentioned a few pages back.

Either of the states now passed in review may terminate in PALSY. If this ensue upon an apoplectic seizure, it comes suddenly, the patient, with returning consciousness, discovering the loss of power in one or more limbs, or sets of voluntary muscles. As a result of congestion of the brain, palsy comes on more or less slowly; and, in either case, it is to be understood that, to be curable, the disease must be the consequence of disordered circulation alone in the brain, not of previous destructive inflammation and softening of its substance—*that* comes under the category of organic, incurable malady.

Palsy invades the moving or the sentient nerves, or both—most generally both; next in frequency the power of motion is lost; and lastly, that of sensation. *Apoplectic fulness* generally abolishes both motion and sensation; *congestive fulness* frequently leaves sensation untouched. The probabilities of cure depend on its origin from either of these states, on its sudden or slow encroachment, on the age and previous life of the patient, his present *organic* power, &c. A sudden attack occurring at an age under fifty years, in a person who had not been guilty of venereal excesses, or spirit drinking, and had not undergone mercurial or iodine courses, and invading one side of the body, or one limb, may be taken in hand with a pretty sure prospect of recovery by the water cure, provided the disease had not existed longer than four or five years. In the opposite direction, the probabilities of course diminish. Yet I have at this time (July 1847) under my care a gentleman of forty years of age, who, *ten years ago*, was seized with sudden palsy of the whole right side, but who is slowly recovering the use of the arm under the operation of the water cure, which he has pursued steadily for two years, with occasional absences from Malvern, and relaxation, not suspension, of the treatment. I have little doubt that he will recover the use of the arm altogether, though I have no such confidence regarding the leg. Rarely, however, does a chance exist of even *bettering* a paralysis of so long standing; neither are the pluck and perseverance of this patient often found.

The Treatment of Palsy will be regulated, in great measure, by its connection with the apoplectic or congestive fulness of the brain, and by its duration. In cases of long standing (and all beyond a year may be so called,) and arising from congestion, all the stimulating applications are advisable—the douche, long shallow, and sitz baths, foot baths, occasional sweatings, with the plunge bath, or douche, after them, wet and dry frictions of the limbs, large doses of water, &c. If the patient has any degree of feverish action of the viscera, that must be first subdued, by fomenting, wet-sheet packing, &c., or, at least, remedies against it must coalesce with those above named. If there be the signs of apoplectic fulness, the depleting plan recommended under that head will release the palsied parts the most readily, to which should be added prolonged frictions of those parts. But in this palsy violent exertion of the limbs is not desirable, as it draws blood towards the origin of the palsied nerves, where too much is already collected; this is still more the case when the disease is recent.

I give a case of palsy which I cured, premising that it is very rarely that the malady is brought under the operation of *water*-treatment at so early a date, and therefore not so likely to be speedily cured, people being generally taught and inclined to try everything else before they have recourse to that "dangerous" treatment. This patient's poverty made him unable to cherish a prejudice, and he "rushed in" where those with fuller purses and fatter heads "feared to tread."

CASE XXIII.—PALSY OF THE RIGHT LEG.

A poor man, in his fifty-fourth year, had lost the use of his right leg rapidly, yet not in consequence of any apoplectic seizure. From the date of his first feeling some numbness of the limb, to that of its total loss, both of movement and sensation, not more than ten days intervened. He came to me when the paralysis had existed between seven and eight months. He had tendency to fulness of head by descent; he had worked at a sedentary business, drank ale freely, but was not given to intoxication; he had used hot condiments to a great extent, and salted meat; bacon formed a great part of his diet. Here, then, were causes enough to beget and maintain an inflammatory condition of the digestive organs; and this, with constipated bowels, sufficed to fill a head congenitally prone to it. In fact, he had all the signs of intense irritation of the stomach, especially of its nerves: fiery red, partially furred, and swollen tongue, red eyelids, hot and red throat, thirst, &c.; hard, large, and frequent pulse; occasional bad headache; sleep disturbed and dreamy. All the symptoms, in short, indicated that the stomach irritation had filled the blood-vessels of the brain and spinal cord; that in some portion of that apparatus these overloaded vessels had pressed upon the nervous matter, and prevented the message of sensation and movement thence to the leg. Further, as the attack had not come on with apoplectic seizure, yet neither had come on slowly, it might be predicated that some *congestive* fulness existed, although the greater part of the blood-vessels were in the state of apoplectic distention; and the concomitant signs showed this combination.

The treatment, therefore, was evident. After two days of preliminary wet-sheet rubbing, I had him packed in a wet sheet for an hour, with a shallow bath of 60°, with cold effusion on the head, and considerable friction of the whole body. He wore a compress on the abdomen, and drank four tumblers of water daily. This was all his treatment for nearly a fortnight. But, meantime, I had reduced his diet to vegetable materials, except on two days of the week. Wet and dry friction of the affected limb was employed twice a day for a quarter of an hour. All this materially reduced the symptoms of internal irritation, and improved his sleep: it also began to act beneficially on the bowels. I had avoided more active treatment at the outset, in order that the tendency of the blood-vessels of the brain to pass to the congestive state might be obviated. Now, however, that the irritations coming from the stomach were reduced, I ventured to carry out the depletory process more fully, and the patient was fomented at night for an hour, was packed in the wet sheet each morning, and had a sitz bath at 60° for three quarters of an hour at noon. Another fortnight of this brought him to two wet-sheet packings in the day, and a long sitz bath. A good amount of general exercise was taken, and the diseased leg was exercised artificially, by considerable frictions with hard towels. The treatment pulled him down a good deal in *appearance*, but his *sensations* were those of vastly increased comfort of head. The pulse fell, the tongue and throat paled, and all the signs of decreased irritation were present. As yet, that is, nine weeks after the commencement of treatment, the only fresh signs in the palsied leg were occasional achings. Regarding these as efforts of nature to re-establish the function of the nerves of the limb, now that the internal cause had been reduced, I followed them up by curtailing the amount of wet-sheet packing, and substituting a short douche of half a minute daily, received on the loins and on the palsied leg. More water was drunk; the shallow bath was lengthened to five or six minutes; the sitz reduced to a quarter of an hour; and both were administered cold. The diet was the same, only a little more latitude was given as to quantity. He continued this for nearly three weeks, the douche being meanwhile gradually extended to two and three minutes. The leg advanced in power of movement, but sensation lagged much more. I now gave up the wet-sheet packing altogether, and adhered to the tonic remedies only, under which the patient got on even rapidly, for in the sixteenth week of treatment he was able to halt a short distance without any kind of support. He continued to use the douche, the cold shallow and sitz baths, frictions, water-drinking, to the amount of seven and eight tumblers daily, exercise, and diet of animal food three times a week, for a fortnight longer, when he wishing to, and I judging that he might, return home, he left Malvern cured of his palsy, though he still walked somewhat lame. This is invariably the case when palsy has existed more than a few weeks, and is in great part owing to the long disuse of the muscles: the *accurate* command over them, through the nerves, is slowly recovered: the limb, in short, has to be *educated*. In the present instance it took a month to gain complete and *precise* use of the limb, after he had ceased active treatment.

This will give an idea of the process of cure in an ordinary case of palsy. As I have said, the process is generally a much longer one, because the palsy has usually existed a much longer time. On the other hand, I have had a case here wherein the palsy had followed a slight apoplectic seizure only a fortnight before, and had possession of one half the body: here the whole paralyzed parts were restored by three weeks of wet-sheet packing, the shallow bath, and two or three foot baths daily, and appropriate diet. In such instances, the only mischief to remove is, the excessive irritation of the viscera, which has caused congestive circulation in the brain and spinal cord: this last has not had time to become fixed, nor the entire system accustomed to its presence, and it therefore readily disappears with the disappearance of its cause in the viscera. Similar to this is the *hysterical palsy*. In it there is no general fulness of blood, but a highly irritative state of the womb and its appendages, and more or less of the stomach, too, which oppresses the function most frequently of the lower part, but sometimes of the upper, too, of the spinal cord. Such suspension or palsy often takes place suddenly, and is as suddenly removed, each time without any apparent cause; but it also occasionally remains for weeks or months. A high degree of nervousness accompanies this kind of palsy, which, in fact, is only liable to occur in women who are congenitally of very delicate and highly sensitive nature. One case of paralysis of the left arm, which had existed for several weeks I cured in twelve days, with fomentations, wet-sheet packing, and the long sitz bath. In another case, where the palsy had come and gone frequently during four years, never remaining away more than six weeks, I succeeded, with pretty nearly the same treatment, in keeping off the seizures for more than eight months; since which time, not having heard from the patient, I presume she has been still exempt from them.

In all these cases of palsy it will be seen, *firstly*, that disorder of the *organic* viscera is the primary step; *secondly*, that this disorder causes apoplectic or congestive fulness and irregular circulation of blood in the *animal* viscera, the brain and spinal cord; *thirdly*, that pressure on some portion of these induces palsy of some portion of the locomotive muscles and limbs; *fourthly*, that according to the duration of the pressure and palsy is the facility of its removal; *fifthly*, that as regards the water-treatment in palsy, its lowering appliances are to be directed first against the irritation of the *organic* viscera, and in recent cases, and in the *hysterical palsy* generally, suffice alone to restore the power of the limb; and *sixthly*, that, after reducing this irritation, the stimulating appliances of the water-cure are to be directed to the excitation of the portion of the spinal cord which has lost its function.

§ 4. SPURIOUS PALSY.—CHRONIC CONGESTION AND IRRITATION OF ALL THE GANGLIONIC NERVES.

I am not aware that the precise states of body to which I have appended these names are fixed and described by any medical author. Practitioners have called and treated the former as *rheumatism;* but neither the name nor the treatment were happy, so far as my experience of the condition, gathered from cases at Malvern, shows. And as regards the latter, it is an accompaniment, and, in my belief, a cause of the former, for which reason it is here placed in conjunction with it. Not that chronic irritation of all the ganglionic nerves *necessarily* begets *spurious palsy;* it may originate other forms of external disorder, as I shall have occasion to state; but there is a certain phase of such general internal irritation, with which spurious palsy is invariably connected.

Spurious palsy is not ushered in with acute pain and fever. Some degree of stiffness of one or more large joints, with painless swelling, unaccompanied by heat, is the first that is seen of it; nor is this invariable, for mere stiffness, without swelling, may begin it. After a time, the stiffness increasing, and the movements of the joints being accompanied by loud cracking, pain begins to be felt in one part of the joint, and may often be covered with the point of the finger. This pain varies in degree with a variety of external circumstances, but more particularly with the electrical states of the atmosphere, being worse when the barometer is low, *before* the fall of rain or snow; an easterly wind also influences it notably for the worse. Mental affections sometimes, though not always, affect it. It is usually exasperated at the menstrual period. Standing and walking increase it; but if the joint be worked without the weight of the body on it, or moved by another person, the pain is neither roused if not there, nor augmented if present. External warmth aggravates, whilst cold decreases it; yet, although the heat of a room or fire is distressing, that of the summer sun is not so; on the whole, however, bracing cold is more genial to the patient than heat. Finally, the pain may disappear for weeks or months.

What has been said of the pain applies to the stiffness, except that this latter is never suspended, as the pain is. Left to itself, or treated as rheumatism *secundum artem*, it rapidly increases. But the peculiarity is, that whilst a joint is becoming more stiff, it is also becoming more bent. The flexor muscles are in a state of spasmodic activity; and if the elbow or knee become permanently and irrevocably stiffened, it is always in the bent posture. In fact, the flexor tendons of the muscles of the upper arm and those of the ham are, in the case of the elbow and knee, felt to be as hard and tight, as if the patient were making violent exertion to retain the bent posture of the joints in question. If you attempt forcibly to extend the joint, the flexor muscles enter into still more violent spasm, until it makes you fear that their tendons will snap asunder.

Pain, swelling, and stiffness, as regards the joints, and spasm, as regards the bending muscles, these are the *local* attributes of this malady. But only the stiffness and spasm are invariably present; swelling may never have been at all, and pain only occasionally, and to small amount. In these peculiarities, as well as in the mode of accession, without acute attack or fever; and in the external circumstances that influence it, we behold startling differences from *pure inflammatory rheumatism.*

If we turn to the *general* attributes of this state, we find a skin almost without circulation, dead, cracking with dryness; flesh that is flabby, meagre, except in the spasmodic flexor muscles of the joints; nails that break almost into powder, and a want of vitality in the whole exterior appearance of the frame. As regards the interior, the signs of gorged and feeble mucous membrane are everywhere, but they are gorged with blood of a tawny, not vermilion colour, the eyelids, fauces, tonsils, tongue, and gums, being all in a swollen or spongy condition; the gums recede from the teeth, and the teeth rapidly encrust with tartar, and decay. The breath is more or less fœtid. The mucus of the mouth and nostrils is of a very thin kind, and from the throat the secretion of it is very considerable. There is seldom cough; though the membrane of the air-tubes gives one sign of the same feebleness and gorging, just spoken of in that of the mouth and the throat; there is more or less expectoration, but without the effort of actual coughing. The pulse is small, rather quick and soft. Appetite good, but not large, neither is there uneasiness after eating; but flushing of the face attends it. Occasionally, though not often, there is sense of sinking at the pit of the stomach, and over the whole abdomen. Beyond this, there is no sign of sensitiveness in the abdomen; on the contrary, there is a singular obtuseness of sensation to pressure even of the most violent degree; neither is the patient ticklish there. The excretion of urine is larger than usual; that from the bowels natural as to quantity, but light in colour, and unusually offensive. The monthly evacuation is regular, painless, but thin in consistence, and tawny in colour; if anything prevents its appearance, the stoppage seems rather to the advantage than harm of the patient. The spirits are only not bad; there is a sort of listless indifferentism, except when the nervous system is roused by more pain than usual. Sleep is sufficiently regular, but very easily broken.

Of the seven cases of this malady which I have had under treatment at Malvern, *all were females;* nor have I ever seen any similar state in the male sex. Of those I allude to, the disease commenced in one immediately in consequence of a violent mental shock; in two instances, it followed on a mercurial course for supposed liver disease; in two others, on courses of iodine as well as mercury; in another, it commenced in the convalescence from typhoid fever; and in the last, it began after the internal employment of arsenic for an external eruption, the drug having been given to the poisonous extent of swelling and stiffening the eyelids, and constricting the throat. Up to that time, this last patient had been the gayest of the gay, an enthusiastic dancer, and a daring horsewoman; for the last six years she has gone on two crutches! In all these cases, the malady commenced when the patients were young, the most advanced in age being only twenty-seven when first seized with it. All had been perseveringly treated for rheumatism, or rheumatic gout, and all had become rapidly worse under the discipline of mercury, iodine, antimonials, purgatives, vegetable and metallic tonics, bleedings, hot baths, &c.; the last being singularly destructive in their effect.

In reasoning upon the appearances of this morbid state, I very soon arrived at the conclusion that it was *not* rheumatism, which it resembles in very few respects. In many points it is not unlike *neuralgic* rheumatism—that is, a combination of nervous and inflammatory irritation of the large joints. But the general constitutional condition is very different; neuralgic rheumatism being the portion of persons of vivid nervous and circulating powers, in whom the blood-making power is good, and who only become affected towards middle life, and in consequence of external cold. Neither is there the peculiar permanent spasm of the flexor muscles, nor the concentration of pain in one small spot. The pain of neuralgic rheumatism also is increased by movement, whether voluntary or induced by another person; it is often felt when the limb is perfectly at rest, and is not, as in *spurious palsy*, only elicited by the weight of the body in standing, or pressure in leaning.

Looking, therefore to the *causes* of this disease, which all tend to the establishment of a state of excessive congestion, feebleness, and irritation of the mucous lining of the lungs and abdominal viscera, and to the visible *symptoms* which all evidence such state, I have no difficulty in assigning *visceral congestion, feebleness, and irritation*, as the basis on which the subsequent phenomena of the malady are raised. It is not inflammation, but feeble congestion of the mucous membranes, a want of power in the blood-vessels to rid themselves of their excessive contents; no local sign, such as dry and furred tongue, and no general sign, such as feverish excitement, exists to give note of inflammatory action. It is one of those infinite shades of congestion which the observer and treater of disease may be perfectly cognizant of, yet be unable to describe by words. But this feebleness, this congestion of the blood-vessels, must be due to a similar state of the nerves which preside over their organic vigour, but which, in this case, fail to impart it, because their own power is similarly oppressed and deficient. With deficient nervous and circulating power in the centre of life, the digestive and blood-making viscera, it cannot be wondered that the elaboration of the food should be bad, and the blood of a poor kind. The secretions disclose this poverty in the thin mucus, and the want of red particles in the blood. Yet as the same blood has to supply the materials of the solids, we find a sad want of healthy nutrition of the flesh, *and all the signs of feeble nutrition of the solid composing the spinal cord.* Here, then, is one cause of the failing power of the will over the limbs. But further, the same want of organic vigour connected with poor blood, prevails in the blood-vessels of the spinal cord, and we have there, as well as in the viscera, a greatly congested state—a congestion which also aids to impede the free action of the will over the limbs. This impediment applies exclusively to the portion of the spinal cord which rules the action of the *extensor* muscles; these being paralyzed in great degree—their antagonism being in abeyance—the *flexors* enter into vehement spasmodic action, and the limbs become permanently bent.

Imperfect nutrition is thus seen to be the source of this complicated malady: and the organic condition of the viscera, which corresponds with that nutrition, is the object of treatment, and has been already signalized as one of feebleness, congestion, and irritation. All the cases that have come before me at Malvern had been previously treated as rheumatic—that is to say, by sudorifics, purgatives, mercurials, and hot baths; all which—the hot baths especially—had considerably and invariably exasperated the disease. I never was inclined to try the common remedy for chronic rheumatism afforded by the water cure—namely, the sweating process; but I have no doubt that it would have proved detrimental, so clear is it to me that the disease is not rheumatism.

What treatment was pursued may only be briefly told, the rather as I have no *cure* to recite. In fact, this section is written more with the intention of putting the reader on what appears to me the right track, regarding the essential character of the disease, than with the desire to connect the water cure with it as a *curative.* It is *the* most intractable and tedious malady in the list of chronic ailments. Of the patients to whom I have alluded, one has persisted in the water-treatment for more than two years, and is certainly better in the limbs, and very much improved in general health; whilst the other, who has been under treatment about eighteen months, has had the progress of the disease towards utter fixation and helplessness, which was fearfully rapid, fairly arrested; and both, as they stand, are encouraging cases. Of the other five patients I have lost sight; persons who have been again and again disappointed, or rendered worse by various plans of treatment, naturally become more impatient and distrustful; so that when they come to the water-treatment, and find no striking alteration effected by it in a short time, they refuse to give it a lengthened trial, and shrink from the annoyance of experiencing another disappointment after another tedious process; and who can wonder at or blame them? However, I have every hope of curing the two cases in which a fair trial is being given. The treatment of them has consisted in wet-sheet packing daily; and twice a day the prolonged douche, sitz baths, and large doses of water, larger, indeed, than in any other disease; compresses to the principal joints, and to the abdomen, have been incessantly applied. The diet has varied between meat on alternate days, and total abstinence from animal food, which is in no case taken daily; all liquids are kept scrupulously cold; and passive exercise in the open air enforced. The amount of these means has been made to vary according to circumstances; sometimes three or four packings in the day are had: the douche has extended from one to twelve minutes, &c. Occasionally the treatment, except a shallow bath in the morning, and the large doses of water, has been suspended for some weeks to allow the system breathing time, and enable it more freshly to re-act on the renewal of the processes.

With the organic feebleness so marked in *spurious palsy*, the tediousness of the treatment, and the great difficulty of rousing the system to critical efforts, might be predicated. And so it is: in both the cases referred to there has been considerable swelling of the feet, a dark-red bluish swelling extending some way up the leg, which has persisted for many months; yet not going further, nor issuing in any extraordinary secretion and exudation, as happens in most cases where a *crisis* in the feet occurs. There is also the greatest tardiness in the appearance of even superficial eruption underneath the heated compresses of the joints. And it is equally difficult to cause augmentation of the intestinal secretions, so as to constitute critical action in the internal parts. Still, inasmuch as an attempt *is* made by the body, it behoves to patiently maintain and improve the power by which it is made, until it shall be made with sufficient effect to relieve the internal congestion by which the nutritive energies of the body are oppressed. That this is to be done by the water cure I believe, from the experience of these two cases; and that all other modes of treatment not only fail to do it, but substantially increase the oppression, was abundantly proved in *all* the cases which came under my observation. Meantime, my hope is, that these few pages on the subject may, at least, warn some so afflicted from boiling their bodies in baths and steam, under the impression that they are suffering from mere rheumatism.

Other results of *general ganglionic irritation and congestion* are traceable in two or three chronic disorders, in which there is still the want of nutritive energy that marks the disease last treated of.

One of these disorders consists in an extreme sensitiveness of the mucous membrane of the throat, mouth, and nostrils, which is constantly gorged with blood, and comes off in shreds, but, withal, is not parched nor affected with thirst. The mucous membrane at the other extremity of the canal is in a similarly gorged and sensitive state, and suddenly falls into excessive diarrhœa with the smallest nervous cause, leaving the patient in the extremity of weakness. And the whole of the abdominal viscera evidence a like congestion and irritation, by the extreme facility with which morbid causes, of diet, and especially of a mental kind, produce feelings of distress there, though not the usual signs of dyspepsia. The head is most capriciously supplied with blood: sometimes the rush towards it, and the irregular circulation in it, known by giddiness, drumming noise, &c., added to the red and turgid state of the face and scalp, show *excessive* amount of blood in it; at other times, this will suddenly change into extreme paleness and shrinking of the face, and faintness, showing the *deficiency* of blood in the head. Palpitation of the heart, and a sense of "stuffiness" and constriction in the chest, are often experienced, though not simultaneously with the rushes of blood to other parts. The limbs experience similar vicissitudes of power, having now an almost supernatural energy, and again a tremulous helplessness; whilst suddenly the feet or hands will be swelled to stiffness, with or without shooting pains, but never with redness, though with heat. The flesh is soft, flabby, and small in quantity. Except in the face, the skin is everywhere pale, lifeless; nothing seems to rouse it, or only for a very short time; but it is exquisitely alive to changes of atmospheric electricity and temperature; it is scarcely possible to make it sweat. The pulse is small and soft when there is no rush to the head, and large and soft when there is. The sleep is a stupor; frequently broken, however, by some rushing of blood to the head, to the lower bowels, accompanied by pain, or to the feet and hands; and then an universal pulsation is experienced. The mind is irritable to the last degree, or else desponding; rarely equable and happy. In the midst of all this, the appetite is tolerably good, and its gratification to the full may bring on general abdominal sensations, blood to the head, to the lower bowel, or to the feet; but never acidity, heartburn, flatulence, nor weight at the stomach.

In all this, we behold a want of proper nutrition of the ganglionic nerves of the viscera, a state of congestive irritation and feebleness which renders them unable to control the circulation of blood, as is their function to do; hence the caprice of the circulation. But throughout, in the flesh and the skin, we see the marks of poor nutrition; and the *varying* power of the brain and spinal cord, in the state of the mind and the will, speaks to the *irregular* nutrition of those parts. And although dyspepsia cannot be said to exist, there can be no question that the process of digestion, in such a condition of the nutritive nerves, is not of the healthy character that would insure good blood for the offices of good nutrition; and no fact of medicine is better established, than that great deterioration of the digestive blood-making function may go on without exciting any distress, or other animal sensation, in the organs appropriated to it: so far are we still from the *secret* of the vital chemistry within us, although, as in the state now under consideration, the effects are exhibited in enfeebled and irregular functions generally, and deficient nutrition of the organs generally. Neither is the state in question referable to *nervousness*, for the patient is for long periods together as steady in his nervous system as the most robust and the least sensitive ploughman, the irregularities of circulation going on with harassing vehemence meanwhile. In short, all we can say of this condition is, that it is one of those numberless phases of disorder of the ganglionic or nutritive nerves by which their power of regulating the circulation of blood in, and their nutrition of parts, is impaired; and that the blood, thus deprived of its general regulator, is called towards and congested in this or that set of organs, according to the application of causes more or less apparent. A peculiarity in it is the *extreme* susceptibility of the viscera to the action of medicine of *all kinds*, the smallest allopathic and all the homœopathic doses producing the greatest possible tumult and distress; it is unparalleled in any diseased state I ever saw; the smallest and the largest dose of an opiate cause quite as much disturbance as the smallest or largest dose of an irritant—calomel, for instance. I have not met with a fair description of this malady in any account of chronic diseases, and that is my sole reason for mentioning it here; for, as in the last disorder treated of, I have no complete cure to record. Indeed, I have only seen two cases of it at Malvern; one of which, after years of medication, was considerably benefited by the water treatment, is still pursuing it, and is now in better health than he has been for ten years past; and the other I lost sight of after a trial of only a fortnight, the patient going home on some business, and friends then persuading him, I presume, that water would put an end to him sooner than physic. Should the former of these patients quite recover, I shall make it known, as well as the entire treatment of his case. Meantime, I trust that should the account of this singular morbid condition call the attention of any medical reader to it, he may add his quota of information to the above. But he will not do so by calling up cases of what is very indefinitely denominated "general nervous debility," and of "general nervous irritability," states which differ in many essential particulars from that which I have described, and the treatment of which, by physic as well as water, also materially differs.

CHAPTER IV

DISEASES OF THE LIMBS.

Organs which minister to voluntary motion—Rheumatism; how connected with visceral disorder; and with excessive use of the limbs—Passage of acute into chronic Rheumatism—Neuralgic Rheumatism—Transfer of Rheumatism; objects and details of treatment—Cases of local, general, and neuralgic Rheumatism—Gout; rationale of its inveteracy—Nervous Gout—Chalky Gout; differences in character and treatment—Is gout curable?—Rheumatic Gout.

After blood is formed, it is distributed by the agency of the nervous system, and the last chapter spoke of the maladies of that system, a very important part of which is the brain and spinal cord. As these last, by the exercise of the thought and will, control the movements of the limbs, I shall now proceed, in physiological order, to mention those chronic diseases of the locomotor organs of the body which have fallen under my observation during my experience of the water-treatment. In doing so, the advantage of having just treated of the organs of the nervous system will appear—so much are the diseased conditions of those organs mixed up with those of the limbs: a complication which, in my opinion, has not been sufficiently appreciated by writers on the disorders which form the subject of this chapter.

The maladies to be now mentioned are not confined to the limbs, although I have headed the chapter as if they were: yet, in the great majority of cases, they are so confined, only exhibiting themselves occasionally in the trunk and head. Still more rarely do they appear in some of the viscera: but this is mostly the result of improper treatment—that is to say, of excessive drugging, and is a superadded disease to that which shows itself in the loco motor organs.

These locomotor organs consist of the muscles of voluntary movement, the fibrous sheaths in which they run, the tendons or sinews by which the muscles work, the general fibrous coverings of the muscles, the ligaments composed of fibrous tissue, which surround and bind together the joints, the fibrous sheath of the spinal cord, the fibrous sheath of the nerves of voluntary movement; and, lastly, the nervous matter of the spinal cord, and of the nerves which convey the commands of the *will* from it to the muscles. All these tissues and organs are included in the act of voluntary motion, and all but one in the painful diseases now to be treated of. That one tissue is the pure muscular fibre, of whose capability of nervous or circulatory disorder we have no evidence whatever. *Palsy* arrests its contractile action, but that is from want of the stimulus of the *will*, and has its source in diseased action in the seat of the will. *Spasm and convulsion* exhibit its excessive action; but the cause of these, too, is to be found in the nervous matter of the spinal cord. A muscle *wastes* because the cellular substance between its fibres is absorbed. Or it *increases* because that substance is augmented: for if a muscle be constantly and *violently* employed, it does not increase in *volume*, but only becomes more compact, the great employment of it causing waste of the cellular tissue, not necessary for voluntary motion: really strong and active men having hard, but not large muscles. So that palsy and excessive use of the muscles both lead to slimness, the only difference being, that in the former they are slim and *soft* from want of contractile action, in the latter, slim and *hard* from frequent and strong contraction; whilst, when moderately used, the cellular tissue is increased by the augmented call of blood to the part, and the consistency of the muscular fibre moderately increased. In none of these, nor in any other case, have we proof of substantial disease of the true muscular fibre—that tissue, whose intimate arrangement, mode of growth, and vital action, are among the most obscure points of physiology. In the diseases of this chapter, therefore, we have to look to the fibrous tissues connected with the organs of locomotion as the seat of their morbid phenomena, and to the nervous matter of the spinal cord as involved, in a secondary manner, in those symptoms.

Those diseases are *rheumatism* and *gout;* clumsy terms which give no sort of idea of the states they stand for, but consecrated by time, although the products of a by-gone pathological doctrine. When signs of both appear, the disease is called *rheumatic gout.*

§ 1. RHEUMATISM.

Cold and damp are the ordinary exciting causes of rheumatism. The proximate cause is an inflammation of the sheaths and coverings of the muscles and large joints. But the predisposing cause is more deeply seated, and requires to be well kept in view when reference is to be made to treatment: indeed, it is the most important consideration when we desire to *cure*, and not merely relieve the chronic forms of the disease.

Supposing a man, with perfectly sound digestive organs, were to get wet when riding on the outside of a coach; he might have a slight cold in the head, or even a slight cough from inflammation of the mucous membranes of the nostrils and air tubes, or he might have a febrile attack from congestion of the mucous membranes generally, *but he would not have rheumatism.* But suppose his stomach and liver, the latter especially, were in a certain phase of disorder, the mouth bitter and hot, the throat inclined to be sore, &c., the same amount of wetting *would cause rheumatism.* This result would further be aided, if the man was in the habit of violently exerting his muscles. The explanation of which is, that he has a certain irritation at the centre of nutrition, which renders the nutritive energy of certain parts at the periphery—namely, the fibrous sheaths and coverings of the muscles—feeble, and their power of resisting external causes of disease deficient. When cold and damp, therefore, are applied to the skin, the blood is driven thence towards the parts most ready, from their want of organic energy, to receive and retain it, and least able to resist its flow. Those parts are the tissues which have been most violently employed, the tissues connected with the organs of voluntary motion, the fibrous tissues of the muscles and joints. In some persons these tissues are congenitally weak, the hereditary predisposition exists, and there is a morbid sympathy always existing between them and the centre of nutrition. These are they who, from an early time of puberty, on exposure to cold, exhibit the results in pains of the limbs and loins, rather than in cough or common feverishness.

Ordinary observation shows that such a process as the above actually takes place in rheumatic attacks. Persons congenitally subject to rheumatism are also congenitally bilious, more or less dyspeptic, of irritable nervous system, and given to rapid and vehement use of the muscular system. In those who have only the accidental predisposition, it will still be found that it consists in a state of more or less dyspeptic biliousness, which precedes and accompanies the rheumatic seizure, and that they too are in the general habit of making considerable use of the muscles. The labouring man who keeps his stomach and liver in a constant state of irritation with spirituous drinks, salted meats, &c., who uses his voluntary muscles hard and long every day, who is exposed to all kinds of weather, is the most eligible and the most frequent victim of rheumatism; for in him the conditions of stomach, of limbs, and of exciting cause, meet in all their strength. Hence in places where perry and cider abound, the peasantry are especially subject to rheumatism; in Worcestershire and Herefordshire there are few of the labouring men without it. The rich and idle man, on the other hand, whose style of diet tends to the erection and maintenance of the same internal irritation, whose skin, clad in all kinds of warming contrivances, is rendered excessively sensitive to the minutest change of external temperature, arrives at the same rheumatism which the other extreme of discomfort brought to the labourer. Both set up a certain phase of internal irritation, which renders the external surface accessible to cold; *that* is the great fact in rheumatism, and bears more upon the treatment than any other. Why the rheumatism seizes one joint or set of muscles more than another, we know not positively; but we do know most positively that more or less digestive derangement is present at the time. I *never* saw a rheumatic attack in which such derangement was not present previously to its commencement. And how often does it not happen that a patient racked with pain, is *instantly* relieved, an iron band, as it were, taken from his limbs, by a copious vomiting of bile or a seizure of common cholera. Again, what are the drugs which usually relieve the *acute* attack? *calomel*, which forces the liver to pour out bile; *opium* in combination with calomel, which arouses an amount of irritation within, that sometimes, though very rarely, is thrown upon the surface in a relieving sweat; *guaiacum* and other highly stimulating gums, which act in like manner: and *colchicum*, which, irritating the whole digestive canal, and causing vomiting upwards and enormous secretions downwards, makes a diversion in favour of the particular phase of irritation that led to the attack, and the pain is relieved. All this points to the relief, to the alteration of action in the digestive organs, and notably in the biliary parts of them, as the great aim in the treatment of rheumatic disorder. Rheumatism is not a mere inflammatory pain of the sheaths of the muscles: it is a certain kind and amount of digestive irritation exhibited by a certain kind and amount of fibrous inflammation. Any other view of it leads to the most absurd and disastrous treatment.

For, let us trace the progress of *acute* into *chronic* rheumatism: it is only the professional explanation of many a layman's story recounted to me. The medicines above mentioned, after rousing in the digestive organs another phase of irritation, different from that which led to the attack, a phase attended with augmented secretions, have thereby assuredly taken away the rheumatic pain. I will say nothing of the other mischievous irritation they have set up in its stead, but only observe that, could it be maintained, rheumatism would be kept at bay, whatever else might happen. Some people *do* maintain it for a time by still dosing with mercury, until *neuralgia*, in some of its forms, or fulness of the head, is induced. Others give up the remedy with the disease: and then the artificial irritation caused by the drugs fades again into the old rheumatic phase, and this simply because this last had never been *cured*, but only *masked* by the treatment. Not only so, the blood-vessels of the internal parts thus irritated, have lost ground by the frightful excitement to which they have been subjected, and are in a more exhausted, that is, a more irritable state, than before: the internal cause has been increased and inveterated, in short. More than this; the inflamed and painful joints have been subjected during the attack, to the processes of cupping, leeching, blistering, &c., processes which, whilst they draw blood from the vessels, tend greatly to weaken their organic energy, and render them more liable to distention and congestion, and still less able to resist external agencies of temperature. The consequence of all which is another acute attack: and another: and another: each one longer than, but not so exquisitely painful perhaps as the former; and for this reason, that the pain has never *entirely* left the muscles between the attacks, and the internal and external diseased parts, weakened by repeated attacks, are unable to make that violent reaction they did in the first seizure. With greater or less rapidity, therefore, both parts sink into a permanently exhausted condition, a permanent morbid sympathy is established between them, *and chronic rheumatism is established with it.*

I declare in all sincerity that the events, of which the above is an explanation, have been related to me by more than two dozen sufferers from chronic rheumatism; the first attack, then the return of dyspepsia or biliousness; the second attack—continued biliousness or dyspepsia—continued rheumatism. These are what they relate, and thus are they explained.

But when *chronic rheumatism* is fairly established, the nervous system of the spinal cord begins to act a part in the phenomena. Something of this is seen in acute rheumatism, when, the patient being perfectly still in the recumbent posture, involuntary and excruciating twitchings of the affected limb or muscle take place. In this case it is plain, that the spinal nerves distributed to the rheumatic part are so irritated by the inflammation of the hard unyielding fibrous tissues in which they run, as to convey to the portion of the cord whence they arise, an amount of irritation which renders its function irregular: the will is lost for the moment, and involuntary twitches occur. Now the frequent occurrence of this in repeated attacks, tends to establish disordered function in the spinal cord, added to the fact, that between each attack, the irritation is more and more firmly fixed, and that the exercise of the will over the limbs becomes a more laborious process. Meanwhile, also, it must be taken into account, that irritations are radiating from the original seat of the malady in the viscera, towards the spinal cord and the brain, too, and that another cause for the implication of those nervous organs is thus presented. Yet more: the sheath of the spinal cord, and of the nerves as they proceed from it, is of fibrous texture, even as the inflamed and pained parts are, and, by virtue of that well-recognized sympathy between similarly organized parts, is especially liable to receive organic irritation from them; and that such takes place is well known by the thickening, and in some cases, partial ossification it has undergone in old rheumatic persons. But any degree of morbid irritation existing in the fibrous sheath in question tends to interfere with the same function of the delicate, highly organized spinal cord it includes. Finally, and in aggravation of all these causes, the usual medicinal mode of treating rheumatism, by keeping the whole ganglionic system of nerves in a constant state of worry, has a marked effect in disturbing the office of the animal system of nerves.

From all these sources the brain and spinal cord, the latter more particularly, derive irritation, which mingles sooner or later, more or less, with the fibrous inflammation of the muscular sheaths. In some instances, this implication of the spinal cord dates from the first acute attack, and the phenomena dependent on the disorder of its nerves are so prominent amid the *purely* rheumatic symptoms, as to oblige the designation of *neuralgic rheumatism* to be applied: a malady of some frequency, and of considerable tediousness. But in the cases of pure rheumatic inflammation, the nervous implication comes to be *established*, only with the establishment of the continued *chronic* state; as I have said, there are signs of its *temporary* existence in the *acute* state. In the chronic malady, it is exhibited first, by some slowness in making the muscular movement follow the will; then by increasing rigidity and intractability of the muscles, especially of the flexors, increasing the fixation of the joints; and, at length, by complete *paralysis* of the rheumatic limb. In the brain, too, the evidence of strong irritation, proceeding from the sources I have mentioned, is given by the occasional occurrence of *apoplexy*, a not very unfrequent termination of a rheumatic existence, and hastened by the mercurials and iodine in such excessive usage by routine practitioners, who stand aghast at the catastrophe, and "wonder what apoplexy has to do with rheumatism," as I have heard one say.

Such, then, is the progress of rheumatism from its first acute attack, to its chronic tendency of the muscular sheaths and joints. Beginning in visceral irritation, it is not *called* rheumatism until it has seized upon the fibrous textures of the voluntary muscles, whence, as well as from the irritated viscera, morbid sympathies radiate towards, and involve the centres of the voluntary nervous system, the brain and spinal cord; the malady becoming more complicated as it proceeds. But other complications sometimes take place in consequence of violent drug treatment, which need only to be very briefly alluded to here.

One is with *the heart*, and most commonly follows on the use of mercurials and colchicum, the excessive irritation which they produce in the visceral ganglionic system re concentrating the whole mischief there, and withdrawing it from the joints whither nature had driven it; and it more especially fixes on the heart, because it is the largest internal muscle, and includes fibrous tissues similar to that of the external muscles and joints. This is commonly called a *metastasis*, or transfer of the rheumatism to the heart; but it does not appear with this explanation in the writings of practitioners of the ordinary medication, because, I presume, it does not appear to them possible that medicines can ever do mischief, and they never think of putting the question regarding them.* Another event, dependent on the same cause, is the dropsical irritation of the fibrous membranes which line the chest and abdomen, the pleura and peritoneum, producing a very serious complication of *dropsy of the chest or belly*.

Now I strongly maintain that these dangerous additions to the rheumatic disorder would never occur, if proper regard were had to the fact, that it is only an external signal of internal visceral irritation; that, in short, nature throws a portion of this irritation from her vital parts within, in order to save them, upon the external parts that are not so essential to life. For then we should not apply irritants to delicate viscera already irritated, rendering almost certain the transfer of the external disorder to some internal part; but we should strive to *bring* more and more of a full circulation to the outer skin, in order to relieve the inner skin, or mucous membrane, not to attempt to *drive* it to the exterior by stimulants applied to the interior.* This last is the parent of all the subsequent mischiefs: it inveterates the rheumatism, it hazards its transfer to vital organs, and it causes its complication with the animal nervous system. As long as this is done in acute rheumatism, there will be abundant cases of the chronic form seeking restoration from the water cure, which, were patients wise, would be their first, and not their last resource, as it now is, the wet-sheet being held before them *in terrorem.*

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* That this opinion regarding the cause of the supposed transfer to the heart, was held by me *whilst yet professing the ordinary mode of treatment, and before I knew anything of the water-treatment*, will appear from the following passage from my work, entitled "The Simple Treatment of Disease," published under the circumstances above printed in italics:—"Much has been said, of late years, of the transfer of rheumatic inflammation of the limbs, to the fibrous membranes of the heart. Like all occurrences that are lengthily insisted upon in voluminous works, written for the purpose of proving them, it is highly probable that the metastasis in point is less frequent than is supposed. I am led to make this remark from the fact, that out of a vast number of cases of rheumatism of the limbs which I have treated, and seen treated, I can only testify to seven or eight, in which there was actual and indisputable ground for asserting such transfer, for which meanwhile I was looking, and against which I was, in my own practice, prepared to act. An instance of the transfer to the heart was shown to me a few months back by a brother practitioner. There certainly was pain, palpitation, &c., of the heart, but as the patient had been, and was then, taking large doses of mercury and colchicum, I ventured to suggest the cessation of these, and the application of mustard fomentation over the pit of the stomach, whereby the heart was soon freed from pain, though it continued to be very irritable. The medicines, in fact, had produced sympathetic irritation of the heart; and this I believe to be often the only transfer that occurs. It may, however, predispose the heart to the actual metastasis; and, in such case, presents another practical argument against violent medication of the viscera in rheumatism."

In treating rheumatism by the water plan, I look upon the muscles and joints as altogether of secondary consideration; the *root* of the disease is not there. To give them the soothing advantages of wet compresses constantly applied, is right and expedient; but all the compresses in the world, just as all the blisters and leeches, will not *cure* rheumatism: they take the edge off acute pain, and may even suspend it, but it returns so surely as the internal cause still remains. It is that cause which it is the object of the water cure to obliterate, to eject. Now, as the external inflammation is the result of an effort on the part of the internally inflamed parts to throw their disorder from them, so the water plan of treatment places them in the best position to do so. It withdraws irritants from them, it applies cooling dilution to them, thus leaving them unoppressed in their salutary efforts: and at the same time, it puts the entire skin in a condition that renders it the ready recipient of the internal irritation, in place of the particular fibrous tissues. Hence it often, indeed generally happens, that at the commencement of the treatment of chronic rheumatism by water, there is an aggravation of the pains: the inner irritation being more completely and vigorously brought out, and the fibrous tissues being, as yet, the weakest and the most accustomed recipients of it. As the treatment progresses, however, the universal skin becomes more freely supplied with blood and organic energy, and the internal irritation is thrown more upon it, and by degrees less on the old diseased tissues: the rheumatism diminishes, as the circulation in the skin increases. Patients whose skin has been for years a stranger to sweat, now are made to perspire readily, and the parchment colour of the skin begins to give place to a healthier hue. And both of these, for a reason which is further exhibited in the occurrence of nausea, vomiting, or purging, generally of bilious matters, or all three; that reason being the diminution of irritation in the digestive viscera, to an extent which allows them to make this demonstration of self-relief. These augmented internal secretions going on simultaneously with augmented cutaneous secretions, the visceral cause of the rheumatism is thrown off, whilst a diversion is made on the entire skin in favour of the muscles and joints. This diversion also acts favourably on the kidneys, by carrying off through the skin a quantity of saline and albuminous matters, which had previously either passed through the kidneys and produced irritation there, and loaded urine thence, or had been retained in the circulating blood, and deposited in larger or smaller quantity in the fibrous tissues of the joints, and tended to their fixation. Such elimination through the skin, in the course of the water-treatment, is abundantly proved by the character of the perspiration itself, as well as by the very much improved state of the urinary discharge, which, at an early stage of the treatment, becomes lighter and clearer. In this manner all the viscera implicated in the rheumatic disorder are relieved of their irritation, and put in the best position to throw it entirely off by some of the chief emunctories; so that once ejected, there is no more rheumatism until the *viscera* are again exposed to morbid causes: the *limbs* may be exposed to cold as much as you please.

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* A late writer on rheumatism, Dr. M'LEOD, remarks, that free sweating fails to bring any permanent or great relief; nor is it likely to do so, whilst it is forced by such means as opium, antimony, calomel, and stimulating spirituous tinctures and liquors: the patient is only sweating off the irritation caused by the drug, not the original one: *that* must be removed by a more *natural* process of sweating.

All these efforts and all these results being wrought through the instrumentality of the nutritive nervous system, it behoves to look to that portion of it which is represented by the brain and spinal cord; the rather, as we have seen how these last are sometimes implicated in the rheumatism, and are therefore in a morbid state. That state is one of active irritation and functional *excitement* in the kind of rheumatism denominated the *neuralgic*, and is a state of functional *oppression*—of partial paralysis—when it forms part of the disorder of very long standing *inflammatory* rheumatism. In the neuralgic kind, there is too vivid circulation in the spinal cord; in the old inflammatory, there is diminished congestive circulation. The vigour, therefore, with which the treatment is pushed so as to rouse the nutritive energies, and the means taken for that end, will vary with these two conditions of the animal nervous system. It would neither be expedient nor safe to employ the sweating process, for instance, so often in the *neuralgic* as in the old *inflammatory* species—if, indeed, it were fit to use it at all; nor to drink so much water, &c., &c,; but rather to have recourse to the wet sheet, and other soothing and lowering appliances. The animal nervous system in short ought not to be subjected to the same amount of excitement, nor should the same amount of effort be induced in the neuralgic as in the purely rheumatic disease; at least it ought not to be induced so rapidly: and that is one reason why neuralgic rheumatism is usually more tedious than the other kind. If you stimulate *suddenly* and *vehemently*, and cause the nutritive nerves to enter *quickly* into effort, you run the risk of augmenting the very condition of the animal nerves which forms so great a part of the disorder: however this may act on the *fibrous* tissue, it will have the effect of aggravating the irritation of the *nervous* tissue, and the *tic* part of the malady will remain, although the *inflammation* of the joints may be diminished. But even in genuine fibrous rheumatism, where the animal nervous system is involved, and in a state of diminished function, care should be had not to put too sudden, too great, nor too prolonged a strain on it by the means of the treatment. More may be done in that direction in this species of rheumatism than in the other; but the condition of the head should regulate the amount, and should be scrutinized as we proceed, by the aid of the pulse, the pupil of the eye, and the state of the external senses. Whilst some of the means are reducing the *visceral*, we must see that others are not exciting too much the *animal* nervous irritation, so that this shall recoil upon the viscera, and at least leave the patient stationary—at worst, increase all his ailments.

Similar considerations regarding the animal nervous system lead to diverse advice regarding mental and bodily exercise in the cure of rheumatism. In the *neuralgic* kind, it is not so desirable to make strong and long efforts to exert the limbs as in the *fibrous* kind; neither can so much be expected from the artificial exercise of frictions about the joints in the former as in the latter. A fact not sufficiently recognized is, that affections of the mind have a marked effect upon chronic rheumatism. I have often seen the limbs rapidly rendered useless, from increased pain and stiffness on the supervention of some disagreeable or anxiety on the mind. This applies more to the neuralgic kind; but I have seen it in both kinds. It is a fact of considerable importance in the treatment, and should be weighed in the balance of the chances of recovery, both by the patient and the practitioner.

Thus it will be seen that *chronic rheumatism*, deriving its origin from an intense irritation of the digestive viscera, and involving the fibrous and the animal nervous tissues of the body, is a disease the treatment of which, with a view to cure, includes nice considerations. Indiscriminate sweating and douching, and water-drinking, and walking, (when that is practicable) are not all that is required, as one might be led to think from the early publications on the subject in this country. Sweating, indeed, is rarely indicated, and tends rather to augment the internal origin of the disease: it is only when there are signs of indolent, obstructed liver, that it is admissible; nor, even then, is it admissible to pursue it for a long time together; the wet sheet should be made to alternate with it. And so of water-drinking and douching, which are both exciting processes: they require to be nicely regulated by the condition of the nervous system, the neuralgic rheumatism for the most part not bearing a large amount of either so well as the chronic inflammatory. But, in both kinds, the great remedy is the wet-sheet packing, which should be practised throughout the treatment: at first alone, and for the purpose of directly subduing the visceral irritation; and subsequently, when the tonic and stimulating processes are employed, for the purpose of obviating any super-excitement which they may produce to the detriment of the viscera. For like purposes, hot fomentations to the abdomen are good, especially in the onset, when there is, in the great majority of cases, no small degree of *extra* irritation, arising from previous habits of diet and physic, to remove before arriving at the old mischief which had been thus masked. In the *neuralgic* rheumatism, more particularly, these two applications are commendable. I have often seen exasperation of the pain from atmospheric and electrical viscissitude quickly relieved by abdominal fomentations alone.

Except these fomentations, the applications should all be cold; at least, the aim should be to bring them to that state. Undoubtedly, in some very long-standing cases, where nutritive disorder has gone the extent of bloodlessness, the temperature may be graduated to the low re-active power of that condition; and beginning with tepid, it should be judiciously decreased. But if there be one canon of treatment more binding on the practitioner than another, it is that which enjoins the use of cold and the avoidance of hot baths in chronic rheumatism. There is no more certain way of inveterating that malady than the parboiling which so many undergo at hot springs; and this because it both debilitates the digestive function, and renders the skin more sensitive to external influences.

So also in the affair of clothing, it is desirable to avoid all excess of warmth, and thereby cultivate the re-active energy of the skin, which is so necessary an aid to, as well as consequence of, the improvement of the digestive energy. But here, too, reference must be had to the full or bloodless condition of the patient, and the former coverings removed gradually—sometimes even by tearing off portions of a flannel under-waistcoat from time to time, or taking advantage of a warm day or two to make an advance in the stripping process. It is only in comparatively recent cases that yon can doff the accustomed underclothing at once. A good rule, even in these, is to let it remain for a week or so after the commencement of the treatment.

No chronic disease is more certainly curable by the water-treatment than rheumatism—except, perhaps, some forms of *dyspepsia* and *nervousness.* There is the greatest discrepancy as to the time requisite for recovery, nor is it very easy to predicate on the subject, some of the most unpromising cases rapidly giving way before the treatment

—whilst a circumscribed one turns out to be vastly tedious. In fact, I have often observed that when the pain is confined to one or two joints, it is harder to get rid of; as if the concentration of visceral sympathy on these two joints rendered its removal to the entire skin more difficult. Age has also some influence on the length of treatment; after the fiftieth year, one is obliged to spread the treatment over more time, because the body is not so apt for strong re-action. I have noticed that women are longer in recovering than men: probably from the *neuralgic* element entering more into the essence of the disease in them; for *that* again influences the time of treatment, that form of rheumatism being more tedious than the purely fibrous kind. But in any case, it is better to look forward to a somewhat long treatment, which is both safer and more sure—safer as regards the nervous system—surer as regards the eradication of the visceral irritation. Altogether the time may be said to range from three to twenty months.

I never treated chronic rheumatism in a person hereditarily predisposed to it; but I should doubt its *curability* under that circumstance, yet should not doubt that means exist in the water-treatment to stop its progress to utter fixation of joints and loss of locomotive power, as well as to arrest any acute exasperations of it. I give two instances of chronic rheumatism, one of a local, the other of a general character.

CASE XXV.—RHEUMATISM OF THE KNEE-JOINT.

The patient in this case could give no very clear account of the origin of his malady. He was young—only twenty-five years of age; and when it began, nearly two years before he came to me, he did not pay particular attention, nor give particular care to it. He had travelled in the East, and in the North of Europe, and had undergone a good amount of fatigue and exposure, and his bodily system altogether had been deteriorated. He was at Oxford when the rheumatism of the knee commenced, and it soon forced him to walk lame from stiffness. An acute attack of a very savage character, accompanied by enormous swelling and exquisite tenderness of the left knee-joint followed the stiffness. Leeches and lotions formed the local, and calomel and opium the general treatment, saline purgatives and nauseant emetics aiding. By these appliances, and rest, the acute inflammation was converted to a chronic one, with which he went about as he best could, without prevention by diet or any other means, and with only some sort of plaster spread on leather and strapped round the joint. As ought to have been expected, a small amount of exercise renewed the acute inflammation, which was again reduced by the same means as before, only with more of them, and with much greater difficulty. Also, the knee was much less able for exercise than before. This alternation of the acute and chronic inflammation went on for many months, the acute attacks becoming nearer and nearer, the state of the knee during the chronic stage more disorganized and painful, and the use of the limb more and more curtailed.

In the course of the treatment to which he was subjected in the acute state, besides leeches, blisters, tartar-emetic cerate, all kinds of irritating liniments and poultices were applied. During the chronic intervals, perpetual blisters, moxas, mercurial and other plasters, mercurial and iodine frictions, &c., &c., were continually in requisition. During both phases of the disease, the *general* treatment consisted of mercury in various shapes (he was salivated twice); of iodine, of which he took several *courses;* of iron, also several *courses;* of opiates in all shapes; of purgatives in all shapes; of vegetable tonics in all shapes. But the most striking system of prevention and cure of this *inflammatory* disease was one which was practised towards the close of the patient's drug experience, and consisted in *complete rest on the sofa in a warm room, strong doses of iron, and a diet of coffee, cocoa, rump-steaks, jellies, turtle soup, bottled porter, and port wine.* And this at a time when swinging the limb between two crutches brought on intensely acute inflammation!

Under such a monstrous *régime* as this (monstrous, although the patient had the advice of the chief metropolitan surgeons), the safety of the whole leg became imperilled. For six months, the patient had desired to try the water cure under my care; but his friends, on the assurance of his medical adviser, "*that it would insure his death,*" prevented him. At length, the same adviser became alarmed at the appearance of the leg, and the ruined health of the whole body, and declared to the patient "*that there remained no remedy but amputation.*" As the sufferer preferred to run the risk of death from the water cure, to the certainty of losing his leg by the knife, he came to Malvern, into my establishment, at the end of January, 1844.

I found the knee swollen to three times the natural size, and the disorganized state of the skin and tissue underneath gave proof of the frightful usage to which it had been subjected. The joint was in every part exquisitely sensitive to pressure; the slightest attempt to bend it more (it was always slightly bent) gave great pain; and in locomotion he was compelled to hang the leg by a ribbon round his neck, *and go on two crutches. This he had done for several months.* But, bad as all this was, the inspection of his viscera and the history of the treatment just given explained it all. I found his digestive organs in a fearful state of irritation, and his liver gorged; the split, swollen tongue, spongy gums, sore throat, all bespoke the visceral cause of the local disorder, and also the havoc which medication had perpetrated. Everything about him showed the same, by the deteriorated nutrition and function of the organs. He was emaciated, pallid, tremulous all over; the excretions of his bowels and kidneys were exceedingly disordered; he could not bear a breath of air, and his skin was always crawling and shivering; he had not a vestige of appetite, and had all along been swallowing the rump steaks and other delicacies *malgré* his unfortunate stomach; when in bed, he could not sleep for pain; and when out of bed, he had, besides pain, an intolerable sense of irritation and restlessness; his spirits were utterly gone; he was a miserable, broken, suffering man.

It was very plain to me that he had come to this pass by having all the attention of his surgical advisers turned towards the knee; his viscera being, meanwhile, made the sport of the absurd treatment I have described. The knee had been rendered worse, and maintained so, because the viscera had been kept in a blaze. As my own observation and convictions always lead me to look for a visceral cause of a chronic local malady, I paid very slight attention to the knee in the present instance. I knew and told the patient that I should not treat *that*, for there was abundance of more serious mischief to get rid of. Accordingly, I merely placed a thick wet compress wrung out of cold water, round the knee; and from first to last it never received any more treatment. But against the vast amount of visceral derangement I directed all the febrifuge and counteracting means of the water cure. Being young, and having a great deal of feverishness, he was at once and vigorously packed in the wet sheet—at first once, then twice a day, and subsequently in two wet sheets morning and evening; the cold shallow bath followed them as usual. For ten or twelve days, he was fomented on the bowels each night for an hour. He wore the compress on the abdomen day and night. He drank, after a week's treatment, ten tumblers of water daily. For a fortnight, I kept him without animal food, giving plenty of farinaceous; his only beverage was water.

For months before coming to me, he had moved, when he dared to move at all, on two crutches, with his leg suspended. *At the end of the fourth week of this hygienic treatment, he walked with the support of a stick; and at the end of the fifth week, without any support at all.* And why? because, long before that time, the mucous membrane had been disgorged, the liver had poured out bile abundantly, the urine had been restored, the skin had recovered its vitality to a great extent, the sleep and the spirits had been recovered, and he had eaten and digested large quantities of plain nutritious food; the viscera had been relieved, and the knee *must* follow. Still, he walked tenderly on the left leg, and avoided pressure on the knee. But it was not necessary to alter the treatment, save in the allowance of more and stronger food in proportion as his power and extent of walking increased, and except that after two months, he took the douche three or four times a week. By the end of those months, he could walk to the top of the highest of the Malvern hills, and usually went over ten, twelve, or fifteen miles of space daily. Meanwhile, he grew in flesh and fat; and so far from fearing cold, would often walk in March, with an easterly wind blowing and the rain descending, without his hat. The knee shrank until the bone was only covered with skin.

It is unnecessary to pursue this case any farther. The patient remained with me two months after all signs of disease in the knee had disappeared, for the total restoration of his general health. Little more than a month ago, he wrote to me, stating that he never for an instant had the smallest difficulty or inconvenience from the limb, or in his general health, since he left Malvern eighteen months before. And in the month of April, 1847, he wrote and told me that I might judge of the state of his legs by the fact that he had the day before walked twenty-four miles without stopping.

The history of this case before it reached me is that of the great majority of rheumatic patients, and it amply demonstrates the folly of treating rheumatism as a disease of the limbs alone. Nothing, literally nothing, but a damp bandage was put round this joint, which had been for many months the subject of bleedings, blisterings, &c., under which it went from bad to worse, because at the very time when these counteracting agents were applied to the skin, irritating agencies were proceeding from the viscera towards the painful joint; between the two, the knee became more and more weak in its vital self-restorative power. Had it, in the first acute attack, been kept cool and perfectly rested, and had low diet been prescribed, instead of the calomel (for which there was as much occasion as there was for a poisonous dose of arsenic), months of suffering, with peril of the entire limb, would have been avoided: the best physician, Nature, would have rescued her organization. And yet it is heresy to protest against such blundering medication!

Here is the short history of a case of general rheumatism, where the visceral irritation arose more from food than physic, and where the muscular sheaths became the seat of disease, for the reason, that the patient made long and strong use of them in his labour.

CASE XXVI.—GENERAL RHEUMATISM OF THE BODY.

A farm labourer, fifty-five years old, living in a low, damp situation, and on a clay soil, became rheumatic five years ago. When he ate meat it was always salted; he devoured heavy paste puddings; and he drank freely, although no drunkard, of thin acid beer. The action of this food on the stomach, and of the cold damp on the skin, did not bring on a severe acute rheumatism, but it stole upon him gradually, slight febrile attacks marking, from time to time, the attempt at an acute fit. The disease crept over him, however, stiffening his loins and hips, then the shoulders, then the knees, and so on, until there was scarcely a moving point which it had not visited. All this time he grew more sallow, yellow in the eye, giddy in the head, and somnolent; the kidneys gave out dark and turbid urine; the bowels were constipated, and their excretions light-coloured; all the symptoms, in short, were those of great biliary and digestive derangement. He had swallowed plenty of "doctor's stuff" from the Dispensary, had abundance of things rubbed on his body, and had taken pounds of Epsom salts on his own account; but the progress was still downwards. The poor fellow's family was in danger of starving from his impaired powers, when he was sent to me by the benevolent aid of a gentleman, who had derived benefit from my treatment.

He could not for upwards of a week be packed in the wet sheet, so much was the vitality impaired; and until then the treatment was confined to hot fomentations at night, and rubbings with the dripping sheet twice a day. At the end of ten days, he was partially packed in the wet sheet once daily; fomented at night; had a rubbing sheet at noon. He drank seven tumblers of water in the day; and from the beginning his diet had been of bread, rice, and farinaceous matters. He had not continued this plan more than a week, when a smart attack of acute rheumatism took place, and every joint in his frame was implicated. I had expected this, and it will be found to occur in the majority of cases of old rheumatism treated by water. It is only an increased effort of the viscera to throw their irritation on the limbs, and, when so induced, is rather to be hailed than feared. In the present instance, the attack only caused me to make more frequent use of the wet-sheet packing; it was taken twice in the morning and twice in the evening, the cold shallow bath following both, and the fomentations in addition after the evening one. But, although he was racked with pain, he lost but little sleep, so much did this treatment keep down fever and restlessness. The attack faded after ten days' treatment, and its retreat was accompanied by an enormously increased action of the kidneys, which poured out water charged with salts and mucus; and this purgation of the kidneys continued more or less for a fortnight. Meantime the chronic pains were still present, but had been reduced in position to the loins and the knees. This was accounted for to me, by the greatly improved complexion of his skin and the more free flow of bile through the bowels, as well as by the urinary purging alluded to. The visceral irritation, in fact, was considerably relieved, and the external parts in exact proportion.

Against these remaining chronic pains, he continued to apply the wet-sheet packing every morning, except two in the week, when he was sweated. A cold shallow bath of four or five minutes was taken after each. He was also well douched once a day at noon, and had a sitz bath of half an hour in the evening. He drank ten to twelve tumblers of water daily; and wore wet compresses on the knees day and night. Exercise was taken as much as the limbs would allow. Animal food was allowed every other day. In about three weeks of this treatment, the liver was roused to fresh efforts at relief; but this time they were not thrown upon the limbs in the shape of acute rheumatism, but were exhibited in nausea, which, after a few days, went on to vomiting of bilious and acid liquids two or three times daily. The bowels were also affected with bilious purging. I allowed this to continue for more than a week without altering the treatment; after which the wet sheet was discontinued, and the sweating used twice a week; all the rest going on as before. This kind of internal crisis had released the loins almost entirely from pain, and the knees to some extent also. But my personal superintendence of his treatment ceased at this point; for he was obliged to return home. He continued the morning ablution there; sat in a tub of cold water once a day; had the knees well pumped upon every morning and evening; sweated once, and was packed in the wet sheet twice a week; and kept up the doses of water; in all which he showed an enlightened perseverance which one often seeks for in vain, among those who lay claim to be the "betters" of this poor man. He was ten weeks at Malvern, and continued to practise the water-treatment for more than three months after his return home, by which time he had lost all remnant of it in every part of his frame. More than two years have passed since that period without any return of the disease, although he inhabits the same damp situation as before;—*but he has learned how to save his viscera, and therefore the cold damp no longer causes rheumatism.*

CASE XXVII.—GENERAL RHEUMATISM WITH NERVOUS SIGNS—NEURALGIC RHEUMATISM.

This case resembled the last in all particulars, except that the patient was twenty years younger, was a highly educated person, with a sensitive and largely-developed head, had been affected with rheumatism seven years, and had certain symptoms indicative of spinal disorder. The visceral cause, too, in this case was to be found in digestive irritation, arising from studious and sedentary habits, and from frequent mercurials taken to obviate the results of those habits. His complaint began with an acute attack of rheumatism, which, treated with mercury, opium, and colchicum, glided into the chronic state, and went from bad to worse, amid the farrago of means proposed and adopted. But the finely organized nervous system of this patient soon caused the implication of the spinal cord, and the legs, besides having their power curtailed by pain, had it also diminished by actual want of voluntary strength. This was evident from the fact that when the pain very much diminished, as it sometimes did in clear, bracing weather, the command over the limbs was equally deficient. It also varied with the condition of the wind, with electrical changes, and was much affected by sleep, being less for some time after it, as if the spinal cord were slow to awake fully. There was not much swelling of the limbs or joints (and this is always the case when the nervous elements enter greatly into the rheumatism), but exquisite sensitiveness, with, very often, real neuralgic pain in a small point of a joint, where no unusual signs of inflammatory rheumatic action existed.

The principal difference between the treatment adopted in this case, and that pursued in the last, was, that sweating was altogether avoided, as it tends to excite the animal nervous system. Reliance was chiefly placed upon the wet-sheet packing twice a day, and fomentations of the abdomen at night, and wet-sheet rubbings twice between the packings. The diet included some animal food once in the day, and excluded any voluminous vegetable matter, such as greens; for *nervous dyspepsia* is implied in neuralgic rheumatism, and will not tolerate the stimulus of bulk. Water was drunk to the amount of ten tumblers daily. In most other details he did as in the last case, and I shall therefore not recapitulate. Towards the close of his time at Malvern, the douche was administered with decidedly good effect: but that was after the stomach irritation had been almost got rid of. Yet the case was a tedious one. The patient worked hard at the treatment at Malvern for nearly four months, and by that time had become erect instead of bent, could walk ten times the distance he formerly could, slept better, and could command the limbs at all times. There remained frequent neuralgic shootings along the limbs, with a lingering of pain above the joints, evidently of a nervous rather than an inflammatory kind. Against these, he continued the daily packing and dripping sheet, with the water drinking, diet, and exercise, for four months longer, at home, and has now remained more than a year perfectly free from pain, although, from prolonged pain and fear of using them, there still remains, and will probably always remain, some degree of stiff movement of the knees. But for all the active purposes of life, and in regard to the absence of all pain, he is cured.

§ 2. Gout.

The observations on the visceral origin of rheumatism, apply still more forcibly to gout. The digestive disorder antecedent to an outbreak of the disease, the immense relief felt by the digestive organs after the fit, and the great and alarming distress of the viscera, when they do not possess the power of throwing it out on the limbs, point beyond all question to the origination of gouty disorder from within. As in rheumatism, also, the biliary organs are especially affected: and the bitter mouth, yellow tongue and eyes, white evacuations from the bowels, and dark evacuations from the kidneys, show the derangement of the liver and duodenum. A certain amount of irritation is established there by repeated stimulation of food, and nature makes the effort to throw it on the external fibrous tissues: a good deal of stomach disturbance attends this effort. If she succeeds, a fit of gout ensues, and the digestive organs recover themselves. If she does not, those organs continue in a state of extreme disorder, and the irritation is so great as to involve the heart or brain, and may, in fact, be transferred to them, producing the dangerous condition called *gout in the head* and *gout in the heart;* or, being concentrated in the stomach, constitutes the equally dangerous spasm of that organ called *gout in the stomach.* At other times the failure of the natural effort to throw off the gouty visceral irritation, or, as it is commonly called, the *suppressed gout*, causes a minor but more incessant disorder of circulation and distress of function in the head and heart; and hence the nervous condition of mind, the headaches, giddiness, faintings, palpitations of the heart, &c., that attend the suppression. Gout in the toes and fingers is the desirable consummation of this disorder: *the centre of life, the viscera must be saved.* The ordinary medicinal practice reverses this, and perils the patient, whilst it perpetuates his disease. It will help an explanation of the aims of the water-treatment to say a few words on this point.

When the patient sends for his medical attendant, Nature has, usually, already thrown her visceral disorder on the limbs: acute pain and inflammation are present in the nervous and fibrous tissues of the toes or fingers. The ordinary remedy is either some form of mercury, or arsenic, or colchicum. These, the last especially, are almost certain to reduce pain, and not unfrequently with great rapidity: dry warmth being, meanwhile, applied to the sensitive limb. But the pain is *not* reduced unless the digestive canal give evidence of having been irritated in the shape of more or less diarrhœa, the presence of thirst, dryness of tongue and throat, nausea, or actual vomiting, &c. Neither in such case is there that appetite and sense of general relief which attend after a fit of gout that has wasted itself, or been treated by the expectant method. More or fewer of these signs will be observed by any gouty patient, who looks accurately into his sensations after an attack thus removed. To the patient, and indeed to the physician who knows little of physiology, all this will appear right: the *gout* is removed, and that is what was desired. The physician, however, who is a physiologist, will say: "True, that irritation which you call *gout* has left the extremities, whither it had been sent by Nature to save her noble internal parts. But look to the signs exhibited by those parts; are they not those of augmented irritation, at least of iritation of a degree and kind that did not exist so long as the limbs were pained and inflamed? The fact is, that your colchicum has set up in the viscera so intense an irritation as to reconcentrate the mischief within, and the fit is cured, not by ridding the body of the gouty irritation, but by driving or drawing it in again. Hence the continuance of the dyspeptic symptoms after the fit; hence, as you will find, the recurrence of another fit ere long, the intervals becoming less and less, until gouty pain is *incessantly* in the limbs, and gouty irritation *always* in the viscera; and hence the gradual but sure enfeebling of the viscera to the point of inability to throw any of their irritation on the limbs, and then comes your gout of the head, of the heart, or of the stomach, and carries the patient off. All this happens because you have meddled with, instead of following, the indication given by Nature, to remove the important internal parts of gouty irritation, at the expense of the less important external parts. It also happens, because you have been treating a name instead of a condition—*gout* instead of *gouty irritation*. With the idea of *irritation* before you, you would surely pause ere you proposed to *cure* that which exists in the toes, by rousing a greater one in the viscera; but with the idea of mere *gout*, which may be anything you please, you may give whatever you please to overcome great external pain. For the rest, "it is as absurd," as BROUSSAIS well remarks, "to speak of *gout in the head*, as it would be to talk of *mania in the toes.*" Gout and insanity are conditions of body, not mere vernacular terms."

All this is quite true, as every one can vouch who has been in the habit of shortening fits of gout by colchicum; it is against the intention of Nature, and no one who opposes her aims can hope to succeed. In the treatment of gout by the water cure, on the contrary, the irritative state being kept in view, and the object of Nature appreciated, the means consist of such as reduce internal irritation on the one side, and of such as aid its removal to the external parts on the other. The wet-sheet packing, and hot fomentations to the abdomen, tend to the reduction of the visceral irritation, and also assist, in some degree, in throwing it upon the external parts. This last office, however, is chiefly performed by the sweating process, especially in one kind of gout, to which I shall presently allude. Now as these various means aid the natural efforts so often referred to, a consequence of frequent occurence in the water-treatment of gout obtains, which, at first sight, is disagreeable and discouraging enough. A patient coming to be treated, but having no acute paroxysm of the disease at the time, is almost sure to have one elicited—perhaps one of the most severe he ever had: and for this reason, The design of the water-treatment is to bring the internal irritation on the entire surface of the skin, by sweat and other signals of skin excitement, so as to divert the visceral efforts from the hands and feet. But these last being the old points, towards which such efforts have been long made (supposing it to be a long-standing case), it is reasonable enough to believe, that when the efforts are powerfully aided by the appliances of the water-treatment, they should still, for a time at least, be thrown upon those points, and with a vehemence proportionate with the augmented impetus given to them by the water cure. That this is the case would appear from the fact, that the more recent the gouty disorder, and the less frequently, therefore, the limbs have been the parts to receive the irritation from within, the smaller is the chance of the water cure producing a brisk attack of the disease, and the greater the facility of at once transferring the mischief to the entire surface of the skin.

This—the transference of the visceral irritation to the entire skin—is the aim of cure in the treatment of gout by water. As I have said, the wet-sheet packing and the sweating process are the principal means of fulfilling it. But the relative applicability of each can only be ascertained by reference to the species of gout to be treated. There are two which are leading in their characteristics, and should be signalized.

In one kind, which may be called *the nervous or neuralgic kind of gout*, the phenomena of inflamed mucous membrane and diseased mucous secretion of the digestive organs, are far from being prominent: there is not much foulness nor yellowness of tongue, although the thirst, heat of mouth, and fœtor of breath are there: but the tongue is very red. Nervous headache of intense degree precedes and attends the fit. The bowels are not constipated, neither is there any deficiency of bile in their excretions, although that fluid be of a somewhat lighter colour. The kidneys give out large quantities of clear urine. The pulse is very rapid, hard, and sharp, and there is very frequently palpitation of the heart. The general feverishness is great. As regards the external parts, there is less swelling, but, if possible, more heat and pain than in the other form; and the pain is not continuously the same, but, without the smallest movement of the limb, takes on sudden and extreme exasperation, and is traceable for some distance up the leg or arm. There is no chalky secretion in the joints. The complexion is clear. The attack comes on more rapidly, is preceded by more *acute* symptoms of dyspepsia, and hangs about for a longer period, being also more erratic than the *chalky gout* now to be mentioned.

In *chalky gout*, the preliminary dyspeptic disturbance comes on gradually, and is accompanied by more decided mucous disorder, foul tongue, exceedingly fœtid breath, extreme biliousness, acid risings, &c. The head is more full, tight, and pulsative, than acutely painful. The pulse is large, slow, hard, throbbing. The bowels are very torpid, and their excretion almost white. The urine is scanty, fœtid, and loaded with salts and mucus. The feverish heat is not acute. Externally, the inflamed joints exhibit considerable swelling and redness, but the pain is burning and throbbing, rather than darting, and it is continuously the same. There is, besides, a still increasing deposit of chalky albumen in the joints, the secretion of which generally terminates the attack more speedily and certainly than in the nervous form. The inflammation also fixes upon, and remains in one or more joints. Persons suffering from this form of gout are pale or yellow in complexion, have waxy lips, and are more or less bloated in appearance.

Such are the trenchant distinctions between two kinds of gouty irritation which require difference of treatment. Occasionally, these distinctions are seen in all their clearness; but more frequently we meet with a commixture of the symptoms of both kinds, a sliding of one into the other. And such it would appear to be: the *nervous* kind being less intense than the *chalky*, which last implies a more deteriorated condition of the blood than the former. In nervous gout, there is irritation and loss of organic energy in the nerves of digestion, sufficient to account for some degree of diseased blood, and still more for the maldistribution of it, so as to form congestions and inflammations about the organs of digestion, the heart, head, and limbs, and hence the unfixedness of its attacks, and the changeableness of their seat, constituting what has been called *erratic gout;* hence, too, the rapidity of its evolution, the internal parts not having as yet lost the capability of making a vehement effort to throw off their mischief. But repeated attacks of this neuralgic gout, and repeated courses of colchicum to get rid of them, gradually debilitate the organic powers of the nerves of digestion, and increase the congestion and oppression of its organs. Gradually, too, and as a consequence of this, the blood-making process deteriorates, the circulating fluid becomes more diseased in its chemical and vital qualities, ceases to redden the complexion, and pours out the morbid matters with which it is loaded, by the kidneys, and, during the attacks, into the sheaths of the joints, forming chalk stones. These results of augmented digestive disorder, of more intense gouty irritation, mark also diminished vital power in the internal organs to throw off their mischief; and hence the comparative slowness with which the attack comes on, the long preliminary dyspepsia, the fixation of the gout upon one or more often diseased and greatly enfeebled joints, and the tediousness of the attack. Sometimes, the organic power of the internal organs is so far deficient as to disable them from throwing out the gouty action at all. In that case the irritation accumulates within, threatening first one, and then another part, the heart, head, lungs, &c., producing by sympathy a host of uncomfortable symptoms, to which the name of *suppressed gout* has been applied. Or if, with this incapacity of the digestive parts to produce external gout, causes be at work which involve the brain in unusual excitement, the gouty action is transferred to that organ, and *gouty apoplexy*, called *gout in the head*, takes place. The like takes place if causes render the *heart* the part most ready to receive the transfer, and *spasm of the heart* is the form the gout takes; or *asthma* supervenes upon its transference to the lungs; or finally, the *stomach* itself takes on the spasmodic action from the excess of its own gouty irritation, and incapability of evolving it.

But although the mingling of these two kinds of gouty action be most frequently met with in practice, it behoves to hold them well in view, when about to determine upon the treatment to be adopted. It is necessary to ascertain the exact proportion between the *neuralgic* and the *purely gouty* symptoms, to observe which predominate, and to apply the processes of the water cure accordingly. How this is to be done, will best appear after briefly mentioning the applications to each kind of gout in its *decided* character as nervous or chalky.

Nervous or neuralgic gout implying a more *acute* disorder of the digestive organs, being accompanied by fever of a more acute character, indicating, in short, a state of excitement and excessive action, the remedies of the water cure which tend to reduce such action are clearly pointed out. In an attack, fomentations of the abdomen, frequent wet-sheet packing, frequent change of the abdominal compress, water-drinking to the amount of eight or nine tumblers daily, and reduction of diet to farinaceous matters, are the best means; damp compresses to the pained joints being added. In the treatment for the chronic condition, the remedies should have the same direction, but need not of course be so vigorously employed. Two wet sheets in the day, one before breakfast, the other at noon, or three hours after an early dinner; the sitz bath once or twice in the day; the abdominal compress worn night and day; six, eight, or ten tumblers of water in twenty-four hours, are the principal means. The diet best adapted is the alternation of animal and vegetable food for dinner, or even restriction of animal food to two days in the week: and the vegetable taken should be confined to farinaceous matters and bread. The exercise should be as vigorous as the condition of the limbs will allow; and, in the absence of sufficient power on their part, dry friction should be carried to a considerable extent. If by these means the pulse be reduced in rapidity and irritability, it is well to try the effect of the douche, beginning with a small power and short time, and gradually extending both; but it is necessary to watch the results of this application, lest it disturb the nervous system too vehemently, and thus render the brain liable to the gouty action. According to the organic capabilities of the individual, all the means mentioned should be increased; two wet sheets in succession, for instance, being substituted for one, twice in the day. The result of this treatment is to reduce the internal gouty irritation, thereby to improve the digestive process, to cause better blood to be made to nourish the solids, which thus gain the power of controlling its distribution. Critical action takes place, but not necessarily in a vehement concentrated form. If the patient be fat or puffy, which is rarely the case in this kind of gout, a few boils may form; but a more frequent crisis is a partial eruption of a kind very closely resembling red gall (*eczema impetiginodes*), which inconveniences, by its mingled burning and itching, for two or three weeks. A more frequent crisis still, is that which slowly goes on in the course of altering the mass of the circulating blood, and is often exhibited in occasional relaxation of the bowels, large quantities of turbid urine, and a continuous transpiration, amounting sometimes to spontaneous perspiration from the skin, of fluid of an acid or urinous odour. All these, however, frequently stop for a time, and then return with more vehemence.

Chalky gout implies a greater intensity of the gouty irritation, with a more deteriorated, oppressed, and obstructed condition of the digestive organs, and notably of the liver. Not only is the function of those parts obstructed, but, as a consequence of it, we have a mass of circulating blood of a very diseased character to deal with. The object of treatment, therefore is to rouse the internal functions, and to quicken those vital and chemical changes whereby the blood is made and wasted; so that whilst better blood is being made, the former diseased mass may be got rid of. For these purposes, it is necessary to employ the sweating process, the douche, the prolonged shallow bath, the sitz bath, and copious water-drinking; as much exercise as possible aiding the whole. The sweating may be practised daily, until headache and feverishness announce that the body is becoming over-stimulated. The same frequency and the same caution apply to the douche. The object of the sitz bath is both to aid the action of the bowels, and to prevent the over-stimulation alluded to. And the whole of these external applications tend to bring to the entire surface of the body a quantity of irritative action and blood, which would otherwise be concentrated within, or thrown with painful vehemence upon certain unlucky toes or fingers. In all this, in the rousing of the digestive functions, in giving a tendency towards the skin, and, above all, in quickening the chemical changes of the blood, the copious water-drinking plays an indispensable and important part. Having attention fixed on the head, it may be carried to any extent, compatibly with the ease of that part. This is, indeed, one of those instances in which the monstrous Gräefenberg doses of water are scarcely out of place; the skin carrying off no small portion of it in the daily sweats, and another considerable portion passing through the kidneys, and carrying with it gouty matters which would otherwise be retained in the circulation, to be thrown upon the limbs. As much exercise and air as possible assist the alterative and detergent properties of the processes recommended, and of the water-drinking; and, as in the previous instance, friction must be used where active exertion is not practicable. If, in the course of the treatment, feverishness and hard sharp pulse come on, two or three days of wet-sheet packing may be used to subdue it; but not unless the head be full and painful, and the sleep prevented; for some feverishness precedes and attends critical action in this malady, and in that character need not be interfered with. Boils form the crisis of this kind of gout more frequently than of the other, the physical condition of the patients being better adapted for their evolution. But ill-smelling and glutinous sweats are, often enough, the only external critical action exhibited, urine loaded with salts and mucous sometimes accompanying them. Bilious diarrhœa comes on from time to time during the treatment, but rarely continues long enough to make, *per se*, a decided impression on the gouty diathesis and disease.

These indications of the mode in which the extremes of nervous and chalky gout should be managed, leave the treatment of the form of disease partaking of both sufficiently obvious, and I need not dwell upon it. Much, all indeed, depends upon the tact of the physician, in balancing the symptoms which demand the soothing or the rousing of the internal functions, and the most perspicuous and voluminous writing would fail to impart practical acumen where it did not already exist.

And now comes the question, "Is gout *curable* by the water-treatment?" The answer of most writers on that treatment has been in the loud and confident affirmative. I agree with them, because the water plan is a *natural* one, and aids nature in her efforts; and I believe that *any* plan which restricts its aim to this will, sooner or later, cure maladies that are not organic; throughout the whole of this work, that belief is accounted for. But the other question, "Has gout *been cured* by the water-treatment—cured in such way that it has not returned, the ordinary causes of diet being avoided?" cannot be answered so confidently in the affirmative. Water-cure books talk of "perfect cures," and in very short spaces of time. But as I desire to write to inform, not to deceive by exaggeration, I am compelled to say that my experience offers no proof of such cures in such time. In short, truth obliges me to state, that not one case of gout has been *cured* at Malvern, either in Mr. Wilson's or my own practice. Acute attacks have been speedily got rid of by the treatment, and with the great advantage of not damaging, but rather improving the viscera; these attacks have been rendered less frequent, weaker, shorter, and more under command; the general health has been improved to a wonderful degree, and, in several instances, the life of patients has been saved by rescuing the viscera from the gouty seizure: old chalky concretions have been carried off, and the use of joints restored; all this I have effected by applying the water cure to gout, and it is much more than can be said for any other plan of treatment. But to satisfy my mind as to the certainty of *cure*, the patient who had previously been attacked two or three times a year, should have passed eighteen or twenty-four months without any attack at all, his mode of life, meantime, being prudent in the matter of diet, but not levelled to that of an invalid; he should, in short, be able to pass the time mentioned without medical treatment, and without gout.* With this definition of *cure*, I do not believe that gout has been yet cured in this country, and I very much doubt whether the histories imported from other countries, if so tested, would be found correct. I have heard that PRIESSNITZ himself confesses, that he never *cured* but one case of gout, that is, eradicated the gouty

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* On the 26th October, 1846, I received the following letter, having reference to this expressed belief of mine regarding the cure of gout. The writer is a gentleman of very high standing in the mercantile community of London, and his statement is published here with a full conviction of its correctness, and because it bears testimony to the skill of one of the best water-cure practitioners, Weiss. It must be observed, however, that the period named in my text—viz., twenty-four months, is precisely that in which another attack took place, and that of a week's duration; showing that the internal gouty irritation was not entirely subdued at that time.

"Sir,—I observe in page 418 of your admirable work upon the water cure that you state your belief that no patient has been thoroughly cured of gout by this system, and that 'to satisfy your mind as to the certainty of cure, the patient who had previously been attacked two or three times a year, should have passed eighteen or twenty-four months diathesis. The fact is, that to do so requires three, four, or five *years*, not so many *months*, of assiduous water-treatment, careful diet, and as much absence from mental care as attainable; and who are they who will afford this time, attention, and self-denial?

It would be folly, however, to avoid a treatment because it will not for ever root up your disease in your own convenient time. Look at the destructive manner in which colchicum reduces a gouty fit, how it approximates the attacks, and utterly disorganizes the viscera; and then regard what the water cure *is* capable of doing, both against individual attacks, and in reduction of the diathesis; the vital parts, meanwhile, improving under its operation can there be a doubt of the reasonableness of adopting the latter, both for the immediate and the ultimate purpose of cure? Life will thereby be rendered more tolerable and more extended, and this is answer enough to the puerile question, that many medical men have put regarding the use of the water-treatment; if it does not utterly cure the gout, at least it does not shorten the patient's life, as colchicum does.

Of the various instances of gout which have come before me, I publish the following, as that in which the water-treatment effected the greatest amount of benefit, and in a comparatively short period of time.

CASE XXVIII.—NERVOUS AND CHALKY GOUT.

This patient came to me in December, 1844. He had been the subject of frequent gouty attacks for twenty years before, and was then in his forty-ninth year. The

without any attack at all, his mode of life meantime, being prudent on the matter of diet, &c., he should, in short, be able to pass the time mentioned without medical treatment and without gout.' Now, this is exactly my case. For years I have been a great sufferer from gout, and in May, 1844, in a feeling of despair, I placed myself under Dr. Weiss (at that time the medical director at Sudbrook Park); here I remained for nearly four months—namely, from the beginning of May till the end of August, and such were the skill and attention of this excellent man, and so efficient the powers of the water-treatment, that I then left, as I believed, entirely cured. In May of this year, however, I had a slight attack, which confined me to the house for one week, and which I got rid of by resorting to the sitz bath, strong perspirations, &c., &c.; indeed, following at home as nearly as possible the mode resorted to at Sudbrook. I beg to say, also, that not one grain of medicine of any kind have I taken since I first resorted to Sudbrook."—J. H.

whole process described in the last few pages had taken place in this instance, and under the auspices of colchicum the paroxysms had become more and more frequent, until the patient passed his life in almost one unceasing fit of gout. Withal, his joints had become almost completely stiffened, those of the fingers containing several chalk stones, whilst the ankle and toe-joints admitted of no bending whatever, and he walked on the flat of his foot. Between this pain and stiffness of the joints, and the feebleness of the limbs generally, and of the whole body, the smallest exertion had become nearly impossible. When he came to me he could not walk fifty yards, and then he lifted the legs by means of the loins, and with infinite labour and slowness. An ascent, however small, was altogether out of the question. His general health, too, had been somewhat giving way of late, and he felt that the colchicum was acting as a slow poison on his frame. This conviction had induced him, some months before he saw me, to make a trial of homœopathy, from which, however, he derived no benefit, partly, as it would appear, from the unskilfulness of its application; so he had no alternative but the old poison, which he took up to the time of coming to Malvern.

It did not appear that the gout in this case had been derived from a paternal source. The patient himself was of opinion that he had acquired it by his copious libations of bad port when at Oxford. This fact, and a singularly happy frame of mind, which never flagged in cheerfulness even in the midst of acute pain, were favourable circumstances; whilst, on the other hand, a lymphatic constitution, bloodless skin and lips, the long continuance of the disease, and the prolonged use of poisonous medicines, were opposed to the prospects of benefit.

Although I have called this a case of "*nervous* and chalky gout," the latter character was far predominant; the nervous character being only exhibited during the intervals between bad attacks, in the rapid passage of pains from one point to another, without any fixed external signs, such as swelling or redness, and also in frequently being confined to the appearance of neuralgic pains along the whole course of the legs, arms, or loins. But in the regular paroxysms, all the phenomena were those of chalky gout. The treatment, therefore, was principally, almost entirely, of a kind to suit this last. The sweating process was employed from the commencement, and, after some time, it was even used twice in the day, a prolonged cold shallow bath succeeding it. The sitz bath was also ordered for half an hour once a day. Cold wrung compresses were kept in constant application to the feet, ankles, and hands. The abdominal compress was constantly worn, and the patient drank from ten to twelve tumblers of water in the day. The diet was of the plainest kind, and included only three or four ounces of animal food once daily; no warm beverage was allowed. After a fortnight of this treatment, the patient was attacked with one of the most severe fits of gout he remembered to have ever had. The pain was considerable, and for some days the treatment was confined to tepid spongings of the body, hot fomentations of the belly for an hour night and morning, frequent changes of the compresses to the joints, very copious water drinking, and restriction of diet to gruel and boiled rice. The fever attendant on the first outbreak of the gout being reduced, the sweating process was renewed twice a day, the fomentations were used at night, and all the other measures were persisted in, the large water drinking especially. Nevertheless, this attack travelled about from joint to joint, with alternations of nervous pains in the loins, hips, shoulders, and ribs, for nearly a month, so powerfully had the water-treatment aided the natural efforts of the viscera to throw off their irritation.

Out of this attack the patient came with improved digestive and locomotive power; a load seemed to have been taken from his system, and although this had been the most severe of his fits, he expressed himself delighted with the healthful sensations which succeeded it, compared with those that had followed far shorter and much less painful fits in which his old drug remedy was employed. In fact, this long and severe fit and its subsequent sensations confirmed the patient's confidence in the treatment, quite as much as if no such unpleasant commencement had obtained; and, after a sojourn of seven weeks in Malvern, he went home, with the resolution to continue some parts of the treatment there. He did so, though not quite so continuously or vigorously as he had done here, and had no gout during the two months he was away. Late in the spring of 1845, he returned to Malvern, and went vigorously to work with sweating, douching, and sitz baths, with large doses of water, and considerable exercise: for by this time he could walk miles instead of yards. In a month, gout made another feeble attempt in the feet, but disappeared after hovering for two days. During the three months he was at Malvern on this occasion, there was no other sign whatever of the malady; but, on the other hand, the restoration of the use of the limb was altogether astonishing. From being unable to walk a quarter of a mile, this patient's usual exercise *before breakfast* in the summer of last year was to walk to the top of the Worcestershire Beacon, the highest of the Malvern range, not by taking the cut zigzag paths, but by ascending straight on end; and he descended in like manner. Looks and spirits improved in the same proportion, and his appetite was only too good; his digestion excellent, and, as a consequence, his sleep sound.

During the first visit of this patient to Malvern, and for some period of his second one, the skin gave evidence of critical action in the shape of glutinous sweat of a strongly urinous odour: and this was secreted, not only during the sweating process, but in the ordinary exhalations, and was perceptible to those near him. It continued for three weeks together. No critical evacuation from the bowels took place: but inveterate constipation, of which he had for years been the victim, was completely overcome by his water-treatment at Malvern.

Like all other Englishmen, this patient not having any compulsory occupation, had created some, which, he thought, *must* be attended to: and he left for his home in Surrey, in June 1845. I had fears for his firmness in continuing the treatment, and in avoiding the causes of his malady. He was not *cured*, although he was in the high road to it, and would still be cured with a couple of years of treatment. The following letter, however, shows how another fit of gout was thrown out by the viscera, and it is very probable that several such would be elicited ere the gouty disposition was exhausted. Between the former and this attack, however, a period of nearly nine months had intervened. It will also be seen that my fears about the patient's sufficient prudence were not ill-founded, as witness "his enjoyment with his friends." So that it is no marvel that gout holds its ground to some extent still. Yet if ever a case of gouty disorder was curable, this is it. The letter, dated in January, 1846, reports thus :—

"I continued for some time nearly the same as when I left Malvern, not making fast progress, nor yet standing still; and thus I went on until September, when the gout seemed determined to measure its strength with all-powerful water. The attack was most spiteful, and I resisted it manfully. It paid a visit to most of my joints, except the knees. I then went to Boulogne for a few days, and never felt better. Of course I was somewhat weak in the understanding, but as to gout, it was quite gone. Occasionally, since then, I have felt little pains, and then it seems as if each of these would have been an attack, for they come on in the old way, but the fit seems spent before gout really takes place. [The truth is, the *visceral* gouty irritation is so diminished as not to suffice for a regular attack; with prudence, it would be altogether worn out.] I sweat every morning with the spirit lamp; the whole process sixty minutes, forty of which are of actual perspiration, during which I drink five large tumblers of water. I find I can now enjoy myself with my friends as much as I could wish. I take wine only now and then, and don't care if it be a pint or so. Indeed, doctor, you have produced all you led me to expect, and I am very grateful for it. Life is to me quite another thing; I can enjoy it, and instead of looking forward to an invalid chair and crutches, I am the wonder of the neighbourhood; and yet I cannot persuade my invalid friends to go to Malvern; they tell me I have a wonderful strong constitution, and all that nonsense. [His constitution was utterly shattered when he came to Malvern.] Now this I feel more than anything—that they should attribute to constitution, what is entirely owing to your skill and learning. But say what I will, they seem determined to die in their ignorance—wilful ignorance; and serve them right too," &c., &c.

If my patient would but become a teetotaler, he would never feel gout again.

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§ 3. RHEUMATIC GOUT.

The exposition of the nature and treatment of the maladies which occupy the two preceding sections, renders any prolonged account of *rheumatic gout* unnecessary. Partaking of the external characteristic of both these diseases, it also acknowledges a similar internal condition: there is the stomach and liver irritation, with the general disorder of nutrition dependent on it. The phase of visceral irritation, however, differs from that of ordinary gout, inasmuch as it throws itself on any or all of the fibrous tissues of the body, of the large as well as the small joints. It also partakes more of the nervous than the chalky character of gout. On the other hand, the rheumatic character is exhibited in the fixation of pain in the large joints and fasciæ, in the extreme sensitiveness of the body to barometric, thermometric, and electric influences, and in the comparative frequency of the disease as an accidental, and rarity as an hereditary infliction.

But the chief point to ascertain is, not what to designate the disease, but what stage of visceral irritation is to be treated. As I have said, the most usual is that which corresponds with neuralgic rheumatism. The difficulty of treating such a combination will be readily understood from what has been said on each of those states. In fact, *rheumatic gout* is a trial for the physician's skill and patience, as well as for the patient's power of endurance. Sudden feverish attacks, then again symptoms indicative of obstructed rather than excessive action, incessant shifting of the seat of pain, and variety in its character, render this one of the most tedious of diseases to bear or to treat. However, the treatment must turn upon the fact of obstruction or excessive action, the rules for which will be found under the respective heads of *rheumatism* and *gout.* In the majority of cases, the wet-sheet packing is the principal remedy, with an occasional and rare sweating. In other cases, again, this proportion is reversed, and the wet sheet is used only from time to time, to keep down feverish excitement. In both sets of cases, the douche is an important remedy, and is employed either as a tonic, when the wet sheet has reduced the visceral irritation and left the body low, or as a stimulant in aid of the sweating in its action of rousing obstructed and torpid functions. Copious water drinking is necessary in all cases, except those which exhibit a fulness of the head.

To be of permanent benefit, the water-treatment of rheumatic gout of long standing should be continued for at least fifteen, eighteen, or twenty-four months. In the course of my practice, I have been enabled to bring considerable relief in several cases, by lengthening the period between the attacks, and by shortening the attacks themselves; but the treatment did not exceed three, four, and six months in duration, and was altogether inadequate as *curative* of disease of seven, ten, and twelve years' standing. Still, I have not the least doubt that *rheumatic gout* is perfectly curable by the water-treatment, if time be given for it. Indeed, one case I *have* cured, in which, from the recent date of the disease, and the youth of the patient, less time was required, and sufficient time was afforded for the thorough operation of the remedies. The patient was only thirty-two years old, and had been afflicted only two years: so that by the brisk and persevering action of the treatment during nearly five months, on a tolerably good constitution, the pains disappeared altogether, and he left Malvern, having an understanding with me that if they returned he was to inform me. It is now eighteen months since that time, and I have heard nothing of the patient or his complaints. With time I would readily promise cure in much worse cases than this.

CHAPTER V.

DISEASES OF THE LOWER ORGANS OF DIGESTION.—DISEASES OF THE EXCRETORY ORGANS.

Uses of excretory organs—Erroneous ideas concerning constipation—Actual function of the lower bowel—Rationale of excretion—Dependence of constipation on the nerves and circulating systems—Constipation with sufficient and with insufficient blood in the body—Its treatment according to the presence or want of blood—Different kinds of piles—A symptomatic disorder—Connection with obstruction of liver, heart, and other organs—Constipation as a cause—Danger of operations for piles—Treatment—Mode of origin of functionary dropsy—Action of the kidneys in it—Absurdity of diuretics—True aim of treatment—Pathology of skin diseases, acute and chronic—Rationale of their outbreak and suppression—Treatment.

Commencing with the diseases which assail the blood-making organs—the stomach and lungs—we have spoken of those of the heart, which circulates the blood; of the nervous system, which regulates its circulation; and of the limbs, which are commanded by the nervous system. It remains to speak of the morbid states which obtain in certain organs, whose function, as regards the nutrition of the body, is rather negative than positive. They assist in the maintenance of the body by eliminating from it matters, which if retained in the circulating mass of blood, would deteriorate its power of directly nourishing the various organs in a healthy manner. Thus, the retention in the blood of the elements which form the *fæces*, the *urine*, the *sensible and insensible perspiration*, gives rise to the most formidable as well as the most tedious maladies; formidable in their acute, and sometimes in their chronic form, in which latter they are always more or less tedious. It is scarcely necessary to add, that the organs which carry on these functions are the *colon*, *or* lower bowel, the *rectum*, the *kidneys*, and the *skin*. As in the case of other organs and functions, I shall only speak of those which I have treated by the appliances of the water cure.

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§ 1. DISEASES OF THE COLON—CONSTIPATION.

On no subject of medical concern is there more misconception and prejudice among the laity, than on that of the depuratory office of the bowels. And no wonder; within the first twenty-four hours of mundane existence an aperient drug is introduced into the digestive canal, and that irritative action, thus commenced is looked on as necessary to the well-being of the individual, by those whose office it is to watch over his younger years. By the time he has reached the years of self-guidance, the same necessity is impressed on his own mind, both from the mental habit, and from the organic craving of the lower bowel itself, for the daily or weekly excitation of the aperient—a craving which induces a sympathetic one in the brain, which *will not* be satisfied until the old irritant is applied to the old spot. No matter how perfectly well the person may be—appetite, sleep, spirits, walking power, in the best order, no pain or ache present, no sense of fulness of the bowels; yet is he haunted by this vision of constipated bowels; all must go wrong, if all be not already wrong, unless his bowels are relieved; they were open yesterday, the day before, and for a year past, but not having been open on this precise day, the worst must happen. How hard, all but impossible, it is to drive into the understanding of patients that all this is error, every medical man of physiological education can say. It would seem as if people lived to have stools, and not had stools to live. These last seem, with large classes of English society, to be the alpha and omega of earthly existence, the one thing of never-fading interest, the much-loved object of daily and hourly solicitude; all the gigantic efforts of the reasoning faculty, all the empyrean flights of the imaginative faculty, are postponed for the elevating function of evacuating the bowels!

It is sad folly, all this anxiety about the bowels; and much of it is at the door of the patient who has grown up in it. But the fault is also shared by great numbers of the lower class of medical men, called surgeon-apothecaries, who either do not know the physiological merits of the subject, and act in ignorance, or else are too indolent steadily to resist the patient's prejudice for the patient's good. These, the ordinary attendants of so many families, might do much to abolish this pestilent and intolerably stupid habit and prejudice of purging the bowels—the parent of so many diseases which shorten life, and of so many more which render life scarce worth having. To the non-professional readers of this work *I* will, at least, offer some explanations concerning the office of the colon, which will show them the uselessness and harmfulness of interfering with it, and also how the *natural, unforced* action of the bowels is the only one which is not harmful to the body.

After being formed out of the food by the offices of the stomach and lungs, the blood is passed on to the minutest blood-vessels of all the tissues of the body. In these vessels the great functions of nutrition and secretion are carried on—*nutrition* depositing the solid parts, and *secretion* the liquid and gaseous. But all the solids, and the greater number of the liquids, are only deposited from the blood for a time—their *status quo* is most transitory. The solids are broken down, and, by the absorption of the veins, again carried into the torrent of the circulating blood. The same takes place with regard to the liquid and gaseous deposits from the blood. Every particle of brain, bone, muscle, sinew, &c., is reliquefied; and almost every drop of mucus, saliva, halitus, bile, &c., is reabsorbed, and recirculated. The chemical elements of all the solid deposits, and of all the secretions, are therefore in the blood.

Now, there are certain of these secretions which exist for the purpose of carrying off from the circulating blood chemical compounds, derived from the breaking down and reliquefaction of the solids of the body. These compounds are called *nitrogenized*, nitrogen being the element they chiefly contain. The elimination in question is effected in the kidneys by the secretion of urine, *and in a portion of the colon, by the secretion of the stools.*

The object which nature has in the secretion of the stools is, therefore, to rid her circulating blood of matters which, being no longer of use for the purposes of nutrition of that body, would interfere with it if retained in the blood.

This is so true that there are instances in which the colon failing to secrete the fæces, the skin has been made the point of elimination to a most disgusting extent. I have myself seen several persons in whom the exhalation from the skin had a strong fæcal odour from this cause. Moreover, any one in ordinary health may observe that when, from any cause, a smaller quantity of stools than usual is secreted, a larger quantity of urine is passed, and *vice versa*, nature ridding the blood by one channel when the other fails.

The fæces, then, are to be regarded as a secretion from the mucous membrane of the colon, just as gastric juice is a secretion from the same membrane of the stomach, the tears from the mucous membrane of the lachrymal glands, the wax from that membrane of the outer ear, &c. In short, their production is exactly similar to that of any other secreted matter of the body; but inasmuch as they are secreted for the purpose of being *thrown out* of the body, they are called an *ex*cretion more commonly than a secretion. Here I would remark, as I have done in several places before, on the mischief of dealing with *names* instead of *acts*. Because stools are called *excrements*, people get it into their heads that they are always there, in the bowels, to be passed off, and *must* be passed off, without the slightest reference to the other effects of the means they use for hastening the excretion, and without asking themselves the very simple question, "Whence come all these fæces?" Yet it is one which, properly answered, would have prevented many a mortal malady, and have saved a world of mental and bodily suffering to the crowds of colocynth-eaters that are to be found in England.

"Whence come the fæces?" Unquestionably from the same source as all the other secretions of the body—*from the blood;* from the blood which circulates in the mucous lining of the colon. Sometimes, there are portions of undigested or indigestible food, such as the skins of fruits, and the husks of oatmeal, mixed up with them, having been untouched by the gastric juice: but these are adventitious, and not an essential part of the stools. These last, therefore, being secreted from the blood, must derive their quantity and quality from the quantity and quality of the blood at the time distributed in the lining of the colon.

But as this blood circulates in blood-vessels which owe their vital irritability to the ganglionic nervous matter (see page 4) with which they are supplied, it follows that the fæcal secretion also depends upon the condition of the nervous matter in question. As in the other secretions of the frame, the first influence of causes is upon the ganglionic nervous matter, which then alters the contractile action of the blood-vessels of the colon, this, again, altering the quality of blood in that part, and the consequent secretions from it.

Thus we see that *the secreting action of the colon depends upon the quantity of blood in its vessels, and the quality of the nervous agency operating upon them.*

Now suppose that a man has a large quantity of good blood in his whole body, there will be amply sufficient for the purposes of secretion in all parts of that body—for the fæces among the rest. Such a man ought to have his bowels evacuated once in twenty-four or thirty-six hours, of between five and six ounces of fæces, and he *will* have them so evacuated if he takes sufficient exercise, does not sleep too long, avoids irritating articles of diet, keeps out mental care and overtoil—if, in short he maintains his ganglionic nervous system in order. For remark, that when he does not exercise his will in bodily exertion, when his brain sleeps too long, or, on the other hand, when it is over-worked, excess and congestion of blood take place in it, and the distribution of blood is rendered unequal throughout the ganglionic nervous system—the brain itself representing a very important part of that system, (see page 4). The consequence is, that blood being *plus* in the brain and spinal cord, is *minus* in the mucous and nervous tissues of the colon; the secretory power of that bowel is therefore impaired; *and the patient is constipated.*

Suppose the same full-blooded person to eat and drink improper things, the same process of congestion of blood takes place in the mucous membrane and nerves of the stomach, which took place in the brain in the other case, with the addition, very commonly, of the brain congestion as well; the distribution of blood is changed, to the detriment of the colon; *and the patient is constipated.*

The causes originating in the brain, and those which begin in the stomach, which I have just mentioned, are the ordinary causes of *indigestion*, and thus it is that *constipa-*

tion forms an almost invariable symptom of that malady in persons who are well supplied with blood.

But why do the bowels become constipated in those who have *not sufficient* blood in the body? Simply, because they do not possess enough of that precious liquid for the purposes of *large* secretion. Nature cannot afford it. What little blood there is in the frame she concentrates in the citadels of life—in the two great ganglionic centres—in the brain and in the stomach—so that *they*, at least, may not want wherewithal to carry on the two great functions of *nutrition* and *sensation*. She thus deprives the outer skin of its blood and perspiration, and the inner excreting skin of the colon of its blood and stools; and we find many a lean, pale, dry-skinned individual also a costive one. If such a man's bowels are opened once in two or thee days, it is quite enough; *his blood cannot afford more; he would be injured if he had more.* If, with this general deficiency of blood, the brain be congested by care, indolence, &c., or the stomach by improper food, this concentration of blood in either of those organs, and this withdrawal of it from the colon, are increased, and *constipation of the most inveterate character is established.*

We are therefore in condition to state as follows:—

1. The *fæces* are secreted from the blood which circulates in the mucous membrane of the colon, under the control of the ganglionic nerves distributed thereto.

2. Causes which operate upon the ganglionic nervous system, as it exists in the brain or about the stomach, so as to concentrate blood in those parts, diminish the secretion of fæces by withholding from the colon a sufficient supply of blood for the purpose.

3. Constipation, therefore, depends upon an unequal distribution of blood, to the detriment of the colon, which is not sufficiently supplied.

4. Such unequal distribution may occur in a body *well supplied* with blood, in consequence of irritations of the brain or stomach. And it occurs in a body that is *deficient* in blood, in consequence of a law of the economy which, in such deficiency, concentrates blood in the organs most essential to the life of the individual—the brain and stomach.

Now, let us take the instance of the constipation which takes place in a man whose frame is possessed of a good supply of blood, and see how the ordinary mode of relief by drugs fulfils the aim of *cure*. The purgative drug acts first of all upon the ganglionic nerves of the entire digestive canal, irritating them and inducing an augmented quantity of blood in the blood-vessels of the mucous membrane (see page 12, *et seq.*). The increased mass of blood in vessels which have lost their tone after the first stimulation of the purgative is, of necessity, attended with increased secretions throughout the canal. Among these secretions are the fæces; the colon is stimulated with the rest of the canal, although it may be doubted whether simple *mucus* does not form the greater part of what should be the real *fæcal* secretion; for organs that are *forced* never give out *natural* secretions. Still, the end of passing something out of the bowels has been gained, and the whole man feels better. But when all is over, what is the condition of the nerves and blood-vessels? Violent stimulation of both has been followed by extreme exhaustion of both; and as the morbid congestion of the stomach and upper organs of digestion constitutes the basis of the constipation (by withholding blood from the colon), the drug, which has attracted sufficient blood into the *colon* to cause fæcal secretion, has also drawn more blood into the *stomach*, where too much already existed in a congested state. It has, in fact, inveterated the constipation of the lower organs of digestion, by inveterating the congestion of the upper organs. Hence the well-known fact, that after a purgative, the bowels are more bound than ever; and the more strong the drug, the more obstinate the bowels after its operation. Hence, too, the growing necessity for more powerful drugs and doses: the cause in the stomach being rendered more intense by each succeeding one. To talk of *curing* constipation by such means, is like the proposal to extinguish fire by pouring oil on it: *it never was so cured, and never will be.*

All this applies when the brain, congested by care and other mental disturbances, acts as a cause of constipation; for it only acts in such a manner by producing the condition of the stomach, which I have mentioned as the basis of constipation. Of course, when both brain and stomach are implicated, the bowels are still more unmanageable. You never see anxiety produce constipation alone: some signs of indigestion are always there as well.

In the other instance of constipation, in persons who are deficient in blood, the results of purgative medicines are still more futile as regards cure, and still more hurtful as regards the general condition of the body. For only consider, that whilst Nature is hoarding up the little blood she has, in her most vital parts, for their functional support, your physic is forcing that blood to an expenditure on fæcal and other intestinal secretions which must further reduce its quantity, and therefore increase its congestive concentration about the stomach and brain ; besides further reducing the source whence the fæces come. You thus at one and the same time decrease the blood that is to supply the stools, and inveterate the mal-distribution which deprives the colon of it. How, in the name of ordinary reason, is constipation to be cured ? *It never was so cured, and never will be.*

No ; he who, in treating constipation, has only the colon in his mental vision, will be sure to miss cure altogether. Direct, forcible evacuation from that bowel is all he will think of : he will neither take hints from antecedent and accompanying conditions of other organs, nor look towards the future state of them, nor even of the colon ; and the event will be, that the colon is no better, and the other organs worse. That is the history of *all* cases treated by medicine. And as the constipation increases with the increase of disorder in the upper organs of digestion, so these last involve other parts in their morbid sympathies, until the patient becomes a mere bundle of diseased and painfully acute sensations, the ganglionic nerves throughout every tissue and organ of the body partaking of the irritation, which took its rise in those of the brain, or stomach, or both.

THE TREATMENT OF CONSTIPATION by the means of the water cure proceeds on the two states of body above alluded to. In both states—in the state of sufficient as well as of deficient blood—there is disorder of the nutritive nervous system, and consequent disorder of circulation, exhibited in congestive irritation of the brain, and the upper organs of digestion.

This congestive irritation occurring in one whose supply of blood is good, is to be met by all those appliances which tend to reduce the too active vitality of any organ or set of organs. With a full, strong pulse, good amount of animal heat, and capability of walking, there can be no hesitation in employing the wet-sheet packing and shallow bath once or twice a day. Hot fomentations at night should also be used. The compress should be worn day and night. These means have the effect of bringing the blood congested in and about the stomach, towards the surface of the body, and thus making a diversion in favour of the colon. But whilst the irritation in the upper organs is being thus counteracted on the skin, there should be efforts made to draw blood down to the obstructed colon, and to re-establish the equilibrium of the visceral circulation. This is done by sitz baths, which in the case of the persons at present under consideration, should be cold, and of twenty, thirty, or forty minutes' duration; friction of the belly with the hand being practised for some part of the time. The effect of these baths is secondary; the first shock of the cold causing vehement contraction of the blood-vessels of all the parts immersed in it, to be followed by their as great relaxation. In this state of relaxation, they admit more blood into their calibre; and from this augmented influx of blood, augmented secretion may be expected. By this process, also, the irritative congestion of the brain is relieved, that organ following in the wake of the upper digestive organs. Thus, whilst the packing, fomentations, and compress, are relieving the nervous and circulating excess of the stomach by inducing a nervous and circulating excess on the skin, the sitz baths are striving to coax an increased quantity of blood from the stomach, and fix it in the colon; and sooner or later this is sure to be effected.

The wet sheet, however, requires to be used with discrimination. If you go on packing too vigorously or long, you induce so great an activity of the skin as to interfere with and diminish the secretorial activity of the colon. In fact, some such process occurs more or less in the early part of the treatment of all cases of constipation. Patients who have heretofore managed to pass a small quantity, at least, of fæces every second or third day, pass none at all for, perhaps, five or six days after commencing the water cure; and this, because the applications to the whole skin have roused its action much more quickly than the sitz baths could rouse that of the colon. But this must be tolerated, and readily may be borne by the patient; the very wet sheet effectually prevents the feverish disagreeables which would arise from prolonged constipation under ordinary circumstances. No harm *can* come from bound bowels so long as the patient is using the water-treatment; I have known a full-blooded person go fifteen days without a fæcal evacuation, and without the smallest drawback of any kind from it; and, after all, he passed but little, the skin having been eminently active all the time. Meantime, the great *curative* end is being gained—that of restoring the balance of circulation in the viscera, by reducing the nervous and circulating irritation in the digestive organs. But when, from the indications of the pulse, tongue, head, and locomotive energy, there is no doubt that this irritation is reduced, it behoves to suspend the wet sheet altogether, even although the bowels should not, as yet, have freely opened; and such, in fact, is mostly the case. Independent of the tendency of the visceral irritation to throw itself on the skin, as already mentioned, the whole of the treatment induces a tumult of the organic nervous system, by which that system is disabled from directing its energies towards the colon with decided vigour. This is the case so long as the wet sheeting is frequently used, and it must be so used until active irritation is subdued. That effected, what is next to be done? Omit the packing, reduce the quantity of water to be drunk, and confine the treatment to one cold shallow bath in the morning, and two sitz baths, each of half an hour or more in the day, wearing the compress as before. The cold spinal washing for five or eight minutes, once or twice a day, is here applicable, and may be used at the latter part of each sitz bath. It acts well by dispersing the congestion in the spinal cord, which so often attends constipation. After a week or ten days of this comparative rest of the body, the bowels seldom fail to commence their office, gradually, perhaps, but certainly and permanently. It may have required many weeks of packing to bring the body to the state when it is expedient to discontinue that process; but, that once attained, you are quite certain of having the command over the malady.

During all this period of packing, fomenting, and sitz baths, the quantity of water to be drunk follows the same rule as they do. Whilst these processes are in active operation, the quantity of water should be rather considerable—say ten or twelve tumblers in the day, five or six of which may be taken before breakfast whilst walking. Nor is this quantity too great, although there be plenty of blood in the frame; the skin and kidneys carrying off the major portion of it under the urgency of the treatment. But when the fomentations and packings are discontinued or abated, the quantity of water should also be reduced to five, six, or seven tumblers. For it should be remembered that water-drinking rouses the organic tumult above alluded to, and when it is desired to quell that, the withdrawal of the water materially helps that end. Again and again I have seen the bowels obstinately bound, so long as large doses of water were taken, and only give way on the reduction of the quantity by one half, or even more. The reason for this is plain enough from what precedes, and the fact is worthy of note to those writers and practitioners who give "the more the better," for a rule of water-drinking to their patients.

Exercise should be considerable throughout the treatment, as aiding in the removal of the internal congestive state, which is at the bottom of the malady. The exception to this rule is to be found in those who have the *atonic congestion of the head* heretofore treated of (see page 267), and which is so commonly connected with constipation. Such patients should walk moderately, and eke out the amount of exercise by gentle riding on horseback.

The diet should be rather of the farinaceous than the animal kind. It is an old observation that large fæcal evacuations accompany the use of vegetable diet. But I have remarked that this only applies to constipation in persons of *sufficient* blood; and it is of such I am now speaking. Yet as, under the treatment laid down, the *waste* of the body is much quickened, it is not well to allow it to proceed to positive depletion and enfeeblement; and therefore I have generally found it best to order animal food to be taken twice or thrice a week, whereby the kind and quantity of blood are maintained sufficiently for the body's strength and secretions, but not sufficiently for the maintenance of local irritation. In vegetable diet I do not here include "brown bread," so commonly employed as aperient food; on the contrary, it is objectionable as an irritant of the stomach and the whole canal, and thus claims rank with drugs; the proof of which is, that, when discontinued, the bowels cease to act, just as they would on the withdrawal of rhubarb or colocynth. Any action of the bowels which is to be relied upon for permanency, *must be the result of their natural efforts*, with plain food of a non-irritating character. With any other kind of food you have only a *forced* action, which ceases, of course, as soon as the forcing agent is withdrawn. Let constipated patients inwardly digest this axiomatic truth, together with the "brown bread" they are eating.

Such is the general outline of treatment of cases of constipation in persons of sufficient blood, in whom the object is to distribute that blood better, by reducing local congestions of it consequent on irregular distribution of organic nervous power. But not unfrequently this maldistribution has proceeded to the extent of *obstruction*, that is to say, the blood has fixed in the upper organs of digestion, or in the brain and spinal cord, sufficiently to oppress, obstruct, and prevent their full action, the organic nerves being also oppressed in their function (see under "Mucous Indigestion"). This is a state of things, which, if allowed to continue, would infallibly lead to the preponderance of waste over supply of blood, and then, upon that, would come constipation with *deficient* blood; for digestion and blood-making cannot go on with obstructed function of the great organs alluded to. Many patients come to the water-treatment in this stage of constipation, and are for the most part tedious to treat; for you have to rouse the obstructed organs to action, and, after that, cause a proper distribution of blood. Besides which, as some active irritation often accompanies obstruction, *that* has to be removed first of all. Take the case of a man with all the signs of obstructed liver, atonic congestion of the mucous membrane of the stomach, and the cognate condition of the ganglionic nerves of those parts, but whose pulse, tongue, and nervous symptoms evidence some *active* irritation besides. It would be necessary to reduce this last by a moderated employment of the packing, &c., recommended in the constipation of all full-blooded persons. Having done this sufficiently to render a stimulating plan of treatment safe, it is well to employ sweating twice or thrice a week, according to the amount of obstruction ascertained. The cold shallow bath in the morning, the douche at noon, and the sitz bath in the afternoon, should be used daily, and all of them for a considerable time, with due deference, of course, and especially as regards the douche, to the condition of the head. If this be full and excitable, the long sitz bath must take the place of the douche. In that case, too, a sweat once a week is as much as can be borne; and the wet-sheet packing, as a soothing and lowering process, comes into requisition. Still, with all drawbacks, it must be steadily kept in view that *obstruction* is to be overcome, and so soon as the stage appears clear, the *stimulus* of sweating, douching, copious water drinking, and strong exercise, should be applied vigorously. Under the operation of these, the liver makes efforts to resume the integrity of its function, and the mucous membrane of the stomach to give out more of its secretions, and of a better quality. But these efforts are not made without considerable nervous disturbance; the ganglionic excitement of the parts disordering the functions of the brain and spinal cord. Hence, previous to the opening of the bowels, there is nausea, heartburn, bitter and acid risings, vomiting of bile and mucus, giddiness, tremblings of the limbs, disturbed sleep, and excessive irascibility—all of which vanish one fine day with a copious fæcal discharge. The rationale of this I need not repeat. However, it is generally wise and necessary, in this case, too, to do as I before said; that is, to modify or suspend altogether for some days the activity of the treatment, so as to allow the organic tumult thus aroused to be directed more particularly towards the colon; otherwise you may have excessive action of the skin or of the kidneys, the colon remaining meantime comparatively, if not absolutely torpid. Sometimes few or more of the signs of disturbance arise and subside again after a few days without any visible result; and this may happen three or four times, at varied intervals, before the final and satisfactory outbreak of secretions takes place. Remark also, that this last is not absolutely necessary: the obstructed organs may, and not unfrequently do, undergo a *gradual* change under the operation of the treatment, with very trifling constitutional perturbation, but with a more distant result.

When there is *congestion of the brain and spinal cord*, in addition to the obstruction of the visceral functions just mentioned, the treatment is rendered more tedious and complicated: but the general indications of it are, as nearly as may be, those detailed in the preceding paragraph, due reference being made to the head, as occasion may require. Upon this point it would be well to consult what has been said in a previous chapter on "Congestive Fulness of the Head." Constipation allied with this condition of the brain, is the form of the malady usually met with in toiling men of care and sorrow—a sufficiently large class in British society. How to remove the toil, care, and sorrow, is here a question which involves that of cure; for the brain congestion without doubt maintains that of the digestive organs by the strict sympathy between the two points. Every painful thought in the brain reverberates on the ganglionic centre of digestion; but also every irritation in the latter tells upon the brain in a manner which renders each thought more painful than it would otherwise be. The treatment I have given certainly reduces the digestive irritation, and, in that manner, diminishes the painfulness of thought. Meanwhile, the necessity of absence from the scenes of excessive toil or anxiety, which the water treatment properly followed entails, and the whole rule of life under the water *régime*, tend materially to withdraw that part of the cause of constipation which is to be found in congestive irritation of the brain. And it may be fairly asserted, that the water plan is the only one which combines withdrawal of irritation from the brain and abdominal viscera; for, although watering-places do frequently help the load off the mind, their drugged waters, assisted too often by pill and potion, as frequently help to lay it on again. These hills and breezes of Malvern *do* soothe the mind, and this water of Malvern does *not* irritate the viscera.

We come now to the *treatment of the constipation which attends bloodlessness*, and the diminution of the blood-making power. This is a more tedious process than when there is sufficient blood in the body; for you have not merely to effect a better distribution of blood, but to *make* it; you have to place the nutritive nervous system in a condition to produce the best digestion of food, out of which to form the best blood. Once rouse the blood-making organs to active function, and you have the secretory function of the colon under orders. But until you do this, it is useless to expect fæces, and foolish to dread the absence of them, and still worse folly to attempt to *force* their presence by medicinal means. It is perfectly astounding how difficult it is to convince patients of this self-evident truth; it is only to be accounted for by supposing that long-continued and periodical irritation of the digestive canal by purgatives, has *accustomed* the brain to the reception of that irritation, until it has become necessary to it at certain intervals; and that when the brain receives it not, in consequence of withholding the purgative, an uneasy sensation is produced there, begetting anxious thoughts on the subject; just as the withdrawal of a dram at a certain time in the day, renders the drunkard's brain and mind fidgety until he gets it. Yet will any one pretend that the dram should be given? Should not the drinker be taught to bear the present and passing disagreeable for the sake of the future and lasting good? And so in this matter of constipation, the patient must fight against the *imagined* necessity for fæcal evacuation; he must resist the sensations sent up from the viscera, because without such effort, he will *never* get his bowels into natural and regular action. Every dose of physic he takes is reducing his blood-making power by further disordering the parts in which that power resides, and therefore rendering more distant the prospect of cure. He must be taught that *no possible harm* can arise from the inaction of the bowels, because, in truth, they have nothing in them. Say that feverishness would arise? But the appliances of the water-treatment are especially adapted to keep that down, even were there excess instead of deficiency of circulating blood in the body. The patient *must* begin the self-denial of physic at some date or other if he desires to be *cured*—the shortest date is the wisest, both for himself and his physician. Therefore *the absolute peremptory abstinence from all purgatives, is the first step in the treatment of constipation with deficient blood.* In the other kind of constipation, a dose now and then to satisfy the mental craving may be unwise, but in the kind we are now speaking of, it *mars altogether* the curative aim to take *any*. You may continue the water cure for a fortnight, and then, taking a dose of purgative, you have thrown away those fourteen days—you have to begin again *de novo.* I have seen this folly perpetrated several times. It is only by virtue of the accumulated bulk of stools that the lower bowel and the muscles of the abdomen are irritated to contract and expel them, in the same manner that a certain quantity of urine must accumulate in the bladder, before this last contracts upon and expels it. But whence is a large bulk of fæces to come every day, or even every second or third day, when there is too little blood in the body. Let constipated people in this plight of body be contented to wait until enough is secreted to open the bowels.

Having come to a clear understanding with the patient on this matter, we need not refer to the colon at all, but bend attention on the organs which minister to blood-making. We must reduce irritation in, and give tone to the nutritive nerves of the organs which digest food; and we must put into healthy play the organs which digest air—the lungs to wit; for out of abundant, well-digested food and plenty of pure atmosphere, good, nutritious blood is obtained. In the majority of these cases of constipation, there is little or no *active feverish* irritation of the abdominal viscera, attended with quick pulse, &c.; therefore, it is not often that the *lowering* processes of the water cure are demanded. Nevertheless, I have generally found moderate fomentations over the bowels with moderately hot water, for half an hour at bed-time, useful; it aids in dispersing that abdominal congestion which I have mentioned as characteristic of bloodless frames. If there be signs demanding wet-sheet packing, it should be practised carefully, with a towel only at first, increasing the size of the damp envelope with the amount of active irritation. The compress should be worn and freshened with water after each meal. Beyond these means the treatment should be of a *graduated tonic kind.* Reaction is weak in such bodies, and if your external means are too suddenly powerful, you do not get reaction, and *therefore* you augment the congestion of the internal parts; you load with more blood parts which are oppressed by what they already have. Accordingly, careful friction with the dripping sheet should be used twice or thrice a day; and in some delicate persons it is necessary to begin with it wrung out of warm water. By degrees, to be regulated by professional observation, we get on from the dripping sheet to the shallow bath, to the sitz bath, and to the douche at length. But in the course of this progress, we are often stopped by the exigencies of the frame, which, urged by the stimulus of the treament, is apt to get into some nervous confusion, the rather, as it is emerging from a bloodless state—but a few days of rest disperses this. Also a little feverishness may get up, which the damp towel-packing and fomentation soon put down. When in the sitz bath, *wet* friction of the abdomen should be used;

and *dry* friction of that part and of the spine and limbs is likewise of great benefit.

In the progress of these means the appetite for food is sure to increase—sometimes long before the digestive power can keep pace with it. This must be looked to and corrected: since it is not from what a man swallows, but from what he digests, that blood is made. But when no disagreeables attend the gratification of the growing appetite, a liberal diet of the food which has the greatest amount of nutriment in the smallest bulk, is admissible and desirable. Meat, therefore, may be taken at breakfast and dinner; and for vegetable matter, bread, maccaroni, rice, and the white haricot are the best—all other being bulky and comparatively innutritious. Out of such articles of diet, treated by a strong digestion, good and sufficient blood is sure to be made.

Water needs not to be largely drunk in this kind of constipation; indeed *large* doses rather increase the malady, by augmenting the waste which goes on by the skin and kidneys. As, however, cold water is a generator of appetite, sufficient should be taken for that end, and two tumblers an hour or so before each meal, followed by a walk, will answer the purpose. When reaction becomes greater, and the quantity of food and exercise increases, the water may also be augmented, because when blood is being vigorously made, it is an object to quicken the chemico-vital changes of the frame, and thus substitute fresh and rich blood for that poor fluid which had previously circulated.

As regards exercise, it should be regulated by the food taken and digested. At the outset, when the body is poor, the waste by exercise should be as small as is compatible with causing reaction of the different processes of the water-treatment employed. The reason for its increase simultaneously and proportionately with that of the food and water taken, is to be seen in the last paragraph. For the rest, it is well to mark that the unceasing walking and working which, with some, is made an essential of the water-treatment of constipation, is *not* applicable in this species of that disease, and may often be *injurious* by increasing the congestion of the ganglionic nervous system of the brain and viscera.

Constipation, as will be seen from what has been said, is rather a symptom of disease in other organs than of the colon itself. In short, it attends the great majority of the maladies treated of in the preceding chapters of this Part—maladies which all depend originally and essentially on disordered function of the nerves of the upper or primary organs of digestion. But it is most notably and invariably a symptom of the different kinds of *indigestion*, of *diseased duodenum*, of *apoplectic and congestive fulness of the head*, *of paralysis*, of *nervous headache*, and of *rheumatism*. In all these instances, the constipation has been removed, but it would be superfluous and impertinent to give them as cases of constipation cured. Yet is the power of the water-treatment over that symptom forcibly exhibited in such cases; for *it* often yields when the other signs of *tic* or *rheumatism*, it may be, are not subdued. The patients who come to be treated for *constipation alone* are those who are suffering from nervous indigestion, and more or less congestion of the head, but who, because they can eat and sleep, are unable to comprehend how any part of them but the lower bowel can possibly be at fault in the business. Hence, if I were to give cases of constipation which I have cured at Malvern, I should be repeating, for the most part, the details of cases of nervous indigestion, or of chronic congestion of the brain; and this, too, would be unnecessary. I shall therefore only mention in a few detached sentences, the results of treatment in several cases wherein the *prominent* symptom of disease—that for which the patients came to be treated—was constipation.

1. Miss M., aged 50. Thin in frame, but full of blood, large strong pulse, good appetite, some distress after eating. Had taken aperients three and four times a week, for upwards of twenty years. Cured in eleven weeks. Remedies: fomentations, towel-packing, compress, sitz baths. Six tumblers of water daily.

2. Dr. M., aged 52. Bilious, hypochondriacal, care-worn; but with abundant blood; appetite, with distress of head after eating. Had taken large doses, and subsequently homœopathic doses of aperients, constantly for five years. Cured in three weeks. Remedies: packing in the wet sheet, fomentations, sitz baths, compress. Eight tumblers daily.

3. Mr. R., aged 46. Emaciated, wretchedly small and slow pulse, bloodless, subject to intense headaches, all the result of severe mercurial courses eight years previously.

Had taken strong purgatives all those years. Cured in fourteen weeks, after going ten days without evacuation. Remedies: fomentations and frictions at first; subsequently, towel-packing, sweating, sitz baths, douche, compress. Four tumblers of water at first; ten and twelve at last.

4. Miss H., aged 45. Spare frame, large strong pulse, good appetite, some distress after eating, liver somewhat swollen. Had taken violent purgatives *every* day, and often *twice* in twenty-four hours for fifteen years. Cured in a month. Remedies: fomentations, wet sheet packing and sitz baths; then wet-sheet packing, sweating, sitz baths. Five or six tumblers in the commencement; ten and twelve at the last.

5. Mrs. L., aged 46. Vivid circulation, but not much blood, good appetite, acidity, heartburn, flatulence. Drugs for the bowels three times a week for many years. Cured in five weeks. Remedies: fomentations, occasional towel-packing, sitz baths, compress. Four and five tumblers daily.

6. Miss C., aged 20. Full-blooded, monthly illness stopped, bad headaches, good appetite, flatulence. Iron and purgatives in combination since her sixteenth year. Cured of constipation and suppressed menses in seven weeks. Remedies: assiduous wet-sheet packing, long sitz baths and compress; then douche and long sitz baths. Ten, twelve, and fourteen tumblers daily.

7. Miss C., aged 29. Spare body, small rapid pulse, anxious mind, appetite small, distress after eating. Had taken purgatives ten years, twice, thrice, and latterly, seven times a week. Cured in four months. Remedies: fomentations, towel-packing, wet and dry frictions, compress; then wet-sheet packing, occasional sweating or rather heating in blankets, long sitz baths, compress. Five tumblers of water at first; subsequently, as many as ten.

These skeleton cases will suffice to show the general plan upon which the treatment of constipation is undertaken, and the result as to time. In this particular of time I have always found great caprice in individuals, especially in those who have a good supply of blood. Cases which, from their long standing and peculiar constitutional symptoms, gave no ground for hoping a speedy cure, were sometimes the soonest to yield to the treatment. The converse was occasionally the fact, but not nearly so frequently. Generally speaking, those cases are the most curable in which vegetable purgatives have been taken; where mercury has been much used as an aperient, the obstinacy of the bowels is great. It is also greater in females than males. Constipation, when there is also more or less palsy of the limbs, is the most obstinate of all; the stimulus of nervous influence which proceeds from the spinal cord and brain to the bowels being deteriorated. I apprehend that it is this which renders the bowels of young females, whose monthly illness is either too scanty or excessive, so obstinate; the womb sends irritative sympathy to the spinal cord, and thus interferes with the nervous stimulus which the latter organ ought to promulgate to the viscera. The same reason—namely, the irregular influence of the cerebral organs—causes difficulty in curing the bowels of those whose brains are the subject of anxious cares, harassing difficulties, and incessant mental occupation; the "*dura ilia messorum*" are as nothing to some of these reapers in the fields of commercial enterprise, forensic acuteness, or political ambition. The loftiest aims of the most active mind lead to, and are often marred by, torpid bowels!*

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* Since sending the above section of this chapter to the press, I have perused a chapter on the same subject in a recently published work by Dr. E. JOHNSON, entitled "The Results of Hydropathy." The author there speaks of the doctrine, that the fæces are a secretion, as one which, "so far as he knows, has not been propounded by any previous writer, nor entertained by any medical man with whom he has conversed." I cannot but marvel at the latter circumstance. Medical men of good physiological education (not your "Hall and College" men, and surgeon-apothecaries), may say that the quality of the food influences the quality and quantity of the fæces, as it assuredly does; but I never heard one who did not regard the excrement of the bowels as a secreted matter, even though it might be mixed with the *debris* of the food. And as regards the written authorities, I may quote my late learned and lamented friend, Dr. JOHN FLETCHER of Edinburgh, who, sixteen years ago, I remember, used to speak of the fæces as a secretion of the colon; and in his admirable work on Physiology, published in 1835, says, at page 121, "the stools, which are not, as is commonly supposed, merely the residual parts of the aliment, but a proper secretion from the follicles of the large intestines;" and again, at page 127, alludes to the stools as among the follicular secretions. It must, therefore, be conceded, that Dr. JOHNSON has been anticipated in this doctrine regarding the fæces. For my part, I had no idea, when advancing the same in the above pages, that I was uttering anything which was new to those members of the profession who know aught of physiology.

§ 2. Hæmorrhoids or Piles

Are symptomatic of obstructed function in some other organ. Most frequently some obstacle to the free circulation of blood through the *liver* is the cause. Bilious persons are amongst the most subject to this disease. The mass of blood from the whole abdomen ought to pass freely through the liver; but when any cause obstructs the passage, the blood gravitates towards the lower parts of the canal, and congestion of blood takes place in the vessels of the *rectum*. This congestion of blood induces inflammation of the mucous lining of the rectum, with heat and pain; and this constitutes the *internal* or *blind piles*. The same inflammation sometimes ends in the deposit of

In the same work, Dr. Johnson announces that "Constipation is not a disease of the bowels, nor indigestion a disease of the stomach," and proceeds to state that they are diseases of the brain, because mental causes operate in their production. But mental causes—fright for instance—also operate in the production of looseness of the bowels; yet it would sound strange to say that "diarrhœa is not a disease of the bowels, but of the brain." The truth is, that Dr. Johnson only announces what any educated physician has known for a long time—namely, that disordered function of the brain does in many instances act as a great, though not sole, cause of disordered function of the stomach and bowels; and the announcement will be more startling to the lay reader, than new or true to the medical one. But a reference to the same learned authority above quoted, Dr. Fletcher, is conclusive as to the *novelty* of the idea. At page 393 of his "Pathology," indigestion is spoken of as "produced probably by the minor sympathetic stimulus exercised on the stomach by the rest of the body, or the inadequate conveyance of this requisite stimulus by the nervus vagus,"—this "nervus vagus" being the eighth pair of nerves, which Dr. Johnson likens to the wires of the "London and Bristol" electric telegraph, and to which he attributes the passage of diseased sensation from the brain to the stomach. But all this was known long, long ago; every care-worn Englishman can tell you that, if he had no care, he should digest well enough. Indigestion, however, comes on *without* care or mental irritation of any sort; of what organ is it a disease *then?* Truly, it is then due to excessive or bad stimulus of aliment, whereby the stomach becomes inflamed, pours out bad secretions, and is dyspeptic; in which case it would be almost as reasonable to say that "indigestion is not a disease of the stomach, but of food;" as, in the case of mental care, that it is not a disease of the stomach, but of the brain. The truth is, there is a nervous, and an inflammatory or mucous indigestion, as I have stated in a previous part of this volume; both are often connected with, and exasperated by, disordered brain function, but both are not the less diseases of the stomach. The astonished patient will scarcely comprehend the contrary doctrine, even though it were more startling and more novel.

fleshy substance, which protrudes around the edge of the anus, and is not sore except when the digestive organs are feverish from any cause; or the congested *veins* of the rectum simply swell and protrude, with heat, pain, swelling, and ofttimes *bleeding;* whence these piles are often denominated "bleeding."

Constipation is commonly said to be a very frequent cause of *piles.* It is far more frequently only a concomitant of them, and both acknowledge the same origin in the upper organs of digestion. Both also acknowledge the same existing causes—sedentary habits with hard-working brains, improper diet, especially hot condiments, fat, and alcoholic liquors, which materially affect the circulation through the liver. It is true that the long-continued retention of fæces in the lower gut may tend to excite inflammatory action in the rectum, and thus produce *internal* piles; but the rectum must be beforehand disposed to inflammation by the presence of a great quantity of congested blood, else the fæces would not induce the peculiar condition of the mucous membrane called piles. Besides, as I have shown, it most commonly happens that constipation does not imply the retention of fæces at all in the lower bowel, but only their non-secretion there. This is *always* the case in persons of bloodless frames; yet piles are common enough in such persons. Moreover, the pain, heat, itching, &c., of piles constantly correspond with the symptoms of increased or decreased irritation and obstruction in the liver, as a superficial observation will demonstrate.

Further, *piles* are almost invariably found in those affected with *organic disease of the heart*, *asthma*, and *pulmonary consumption.* In all these complaints the liver is gorged, obstructed, and very often swollen, and the passage of the abdominal blood through it impeded. The physiological rationale of this need not be given here: the *fact* is indubitable. Piles are, therefore, symptomatic of those diseases, although resulting more immediately from deranged liver.

Piles have a wonderful connection with the circulation of blood in the brain. They generally first appear towards middle age, at the time when there is a natural tendency of blood towards the head. But besides this tendency, the causes of dyspepsia and disordered liver have usually produced their effect of that age. The consequence is, that whilst the stomach and liver disorders (see the sections on those subjects) are gradually filling the head with blood, their obstructed function is causing congestion and irritation in the rectum. This irritation acts as a counter-agent to that which is going on in the head, and when the head is at the worst, the rectum will be found to be most quiet, until the disorder of the rectum is reduced by bleeding from the piles, when the head is straightway relieved. The practice of artificial bleeding of the anus by leeches, proceeds upon this well-known sympathy between the rectum affected with piles and the brain. But the same knowledge has not, in my opinion, sufficiently deterred medical practitioners from the habit of taking off hæmorrhoidal tumours either by the knife or ligature—a dangerous practice. Again and again I have seen instances in which the amputation of piles has been followed in a few months, in a year, or in two years, by apoplectic seizure in the head; the pain, giddiness, and confusion of that part having been considerably aggravated in the interval between the surgical operation and the seizure. Counteracting as their presence and their occasional relief by bleeding is to the head, one cannot be too careful in avoiding all that can diminish such agency; on the contrary, we should, when the brain is full, rather strive to bring on a fulness of the piles, which shall tend towards bleeding and consequent relief to the upper organs of digestion and to the brain.

The purely symptomatic character of piles renders their TREATMENT subservient to that of the organs and the condition which originate them. Those organs, as I have said, are the upper organs of digestion, and, notably, the liver, and that condition one of congestion and obstruction. Very much, therefore, of the treatment of the hæmorrhoidal state is to be found under the head of *Indigestion* and *Liver Disease*, and the repetition here is unnecessary. The chief indications are, *firstly*, to reduce active *irritation* of the stomach and liver if it exists, and this is done by wet-sheet packing, fomentations, the compress, moderate water drinking, and low diet; *secondly*, to remove *obstruction* of function in the aforesaid organs, either when it exists alone, or after the reduction of active irritation by the means just mentioned; and this is done by sweating, the douche, large quantities of water, prolonged shallow baths, good amount of food, and great exercise; and, *thirdly*, to draw blood down and fix it in the rectum; and this is done by prolonged sitz baths. In some cases, all these indications require to be fulfilled, and all the processes of the water-treatment require to be employed in succession, or as symptoms arise. In other cases, the two latter indications only demand attention, and these are the most tedious cases. In every instance, however, the great object is to induce such a constitutional excitement as shall bring about a critical effort of the upper organs of digestion, to throw their disordered action on the skin on the one hand, and on the lower bowel on the other. As a consequence of this effort, the piles are for a time considerably aggravated by the treatment; but unless they were aggravated, they would not be likely to relieve themselves by bleeding, the frequent repetition of which at length abolishes the inflammation of the mucous lining of the rectum, which is the basis of their existence. But inasmuch as this aggravation and bleeding are indicative of a critical effort made by the stomach and liver, these last are also relieved by the loss of blood, and their malady cured simultaneously with that of the rectum. And when the stomach and liver irritation is subdued, the head, no longer receiving morbid sympathies thence, also ceases to fill with blood. Yet, let it be remembered, that all these processes of relief must be *natural* acts; they must be results of the whole system striving *naturally* to save vital parts by the agency of parts less essential to life; otherwise the relief obtained is transitory and fallacious. Leeches applied to the anus relieve the rectum, and, through it, the upper digestive organs and the head, *for a time*; but as they do not and cannot *cure* the mischief about the liver and the stomach, that mischief soon fills the rectum again on one hand, and the head on the other.

I look upon piles as one of the maladies in which the water-cure is infallible, except, of course, where they are connected with *organic disease of the heart*, *incurable asthma*, and *pulmonary consumption*; as also when they co-exist with *organic disease of the liver*. In this latter case, though, they may be considerably palliated by sweating and the sitz bath, and their fulness relieved for a period. In all the other cases, where irritative and congestive disease of the stomach and liver are alone at the foundation of the disorder, piles are perfectly curable.

But it must not be denied they are tedious in their progress towards cure. Months, not weeks, of treatment are requisite. Even when they have existed only for a year or two, it requires three or four months of active treatment to get rid of them. The reason of this is, that they are the *result* of an internal state of mischief of long previous existence, which state, and not the piles, requires to be treated. Another reason is, that piles are most commonly the disease of persons of slow circulation, and therefore of slow re-active energy, upon whom *any* treatment would act but gradually. But when it is considered that they are, by their local irritation, a source of continued discomfort, or even torture, and that, by their sympathetic connection with the brain, they are a source of actual danger to the integrity or life of the brain, the wisdom of undergoing, and steadily pursuing, the only treatment that can *cure* them cannot be doubted. I give very briefly a case of them, which, it is necessary to state, is one of the most speedily cured of those which have come under my care at Malvern.

CASE XXX.—INTERNAL, OR BLIND PILES.

The patient is thirty-nine years old, and had been troubled with the pain, heat, and bearing-down feeling, which attend internal piles, for nearly four years. The fæces evidenced by their calibre the swelling, and the sharp pain in passing them showed the inflammatory state of the rectum. There was always more or less tenesmus after a motion, and occasionally a little blood would follow it. Tightness, giddiness, confusion, and sometimes severe pain, had possession of the head, but alternated much in degree. He had led a dissipated, and subsequently a sedentary life, having in the former state undergone two mercurial courses, which, with abundance of alcoholic drinks of all kinds, had made considerable inroads on the integrity of his digestive organs. The disorder of these organs disinclined him for bodily exertion; he became sedentary, but did not take better care of his digestives, although he was now prudent in the matter of strong liquors. Under these circumstances he became puffy and yellow, and gave other unequivocal signs of gorged liver. Headaches became more frequent, and at length, after a year or more of these symptoms, the rectum began to exhibit the signs described above. He came to me after nearly four years' trial of various purgatives and local applications. He had no idea that the head and piles were in sympathy, and in fact applied to me rather about his head than his rectum, the disorder of which was told incidentally. It was plain to me, however, that piles were at the root of his head sensations, and I accordingly treated *them.*

He was first packed in the wet sheet every morning for an hour, with the cold shallow bath and affusion on the head. At noon, and in the afternoon again, he took a cold sitz bath for fifteen minutes, which was gradually extended to half an hour each time. He drank about six tumblers of water in the day, wore the abdominal compress day and night, and took a great amount of exercise. His diet was of vegetable matter, except on three days in the week, when he took some meat. When the head was very bad, his feet were rubbed in cold water for a quarter of an hour. And twice or thrice, when the tongue was dry, the pulse hard, and the head more than usually tight, the stomach and bowels were fomented with flannels and hot water for an hour at bedtime.

This plan, continued for three weeks, took away the feverish symptoms which announced the acute form of stomach and liver irritation, as well as those which arose from the heat, swelling, and pain of the rectum. This done, the object was to draw blood downwards towards the rectum. The packing was given up as a regular application; the shallow bath in the morning was continued; but the sitz baths were extended to forty-five minutes each. A compress was applied constantly to the anus, and this tended materially to keep down the heat and pain of that part. Still the sitz baths caused blood to accumulate in the lower gut, and this sometimes aroused some general feverish symptoms, which two or three wet-sheet packings subdued. The bowels, at the outset hard, became more easy in their action; but the fæces were pale, and the eyes, skin, and urine showed the torpid state of the liver. In the fifth week of treatment, I therefore gave him a couple of sweatings, and repeated them in the seventh week, keeping a cold cloth round his head whilst in them. This materially altered the character of the fæces, and relieved the head eventually, though it tried it at the moment. Persisting in all the above treatment for five weeks more, *external* piles began to protrude, which in a week or ten days began to bleed, at first in small quantity, and only once in two or three days, but, after a time, daily and freely. The relief to the head, however, dated from the first few drops that were given out; all that was needed to relieve the symptoms being *a bonâ fide* critical action, which these few drops of blood evidenced.

From this date the patient went steadily on towards amendment, the pain of the rectum disappearing with the free flow of the blood, just as that of the head had done with the smaller loss. At the end of sixteen weeks of treatment the piles had altogether gone, and it only remained to employ tonic treatment to make up for the blood that had been lost, and to put his general system into better order; which, indeed, had been in some measure effected during the treatment for the piles. I should mention that, when the bleeding became free, the sitz baths were considerably reduced in duration, and the wet-sheet packing discontinued altogether, that being the best means of leaving nature to bring about her own cure; for when she has once set up a critical action of any sort, the less we interfere the better.

When we have to treat *bleeding* piles, the sitz bath is the chief remedy; but it requires much discrimination in its use, for if it be employed so as *suddenly* to arrest the flow of blood, some important organ, especially the brain, is sure to suffer. The practitioner should ascertain the precise state of circulation in the different internal organs, and how far each is able to resist the transfer of irritation from the rectum, for *that* is what takes place when bleeding from piles is suddenly stopped. Upon the knowledge he obtains on this point, he regulates the temperature, duration, and frequency of the sitz baths. Should there be any general feverishness attendant on the *gradual* stoppage of the piles, or should signs of transferred irritation to some internal organ appear, recourse should be had to the wet-sheet packing in the first case, and with the addition of a longer sitz bath in the second. Very little water should be drunk. The compress should only be worn part of the day, and then frequently freshened with cold water. Very little animal diet should be taken, and a proportionately small amount of exercise. In fine, it should always be kept in view in the treatment of *bleeding piles,* that they are themselves efforts of the body to subdue mischief in some noble organs, and that all we have to do is to take care that the effort, that is, that the loss of blood attendant on the effort, should not be more than the body generally can bear, on the one hand; and on the other, that to arrest the effort suddenly, that is, to stop the loss of blood suddenly, would be to throw irritation back on the noble organs, which are striving to save themselves through the agency of the rectum.

§ 3. Dropsy.

The morbid accumulation of liquids in some of the cavities of the body, or underneath the skin, is always accompanied by a suppression of the secretion of urine; and this is one reason for placing *dropsy* in the present chapter. It would, however, be erroneous to suppose that dropsy depends only on suppressed function of *the kidney.* On the contrary, this suppression is more commonly the *consequence* of the dropsical action in some of the cavities of the body. But the organ whose suppressed functions act as a *cause* of dropsy, is another vastly important excretory organ—*the skin.* The process of dropsical effusion is more complicated than is commonly thought. I proceed to state it.

A man irritates his stomach and liver until the circulation in the skin becomes utterly deranged; its vitality is sorely diminished, its power of resisting external temperature almost abolished, and its excretory function arrested. How liver and stomach disease bring about this condition of the skin has been already shown when treating of those maladies. And it is to be remarked, that the great majority of dropsical cases are of spirit drinkers, who have diseased livers. The quantity of vaporous fluid given out by the skin is something more than forty ounces in the day.* This quantity being more or less diminished with the diminution of vitality in the skin, the fluid thus arrested is retained in the circulating blood. But as the blood would be burdened, and the solids irritated by its presence and bulk, nature seeks some other surface by which she may throw off the fluid in question. This is found in the membrane which forms the outer covering of the lungs (the *pleura*), in that which forms the outer covering of the bowels (the *peritoneum*), or in the cellular tissue which lies between the skin and the muscles of the trunk and limbs. And according to the point chosen, *dropsy of the chest*, *dropsy of the belly*, or *dropsy of the skin* (as it is improperly called), is generated. It should be remembered that all these parts, the *pleura*, the *peritoneum*, and the *cellular tissue*, are always exhaling, in their *healthy* state, a fluid very similar in composition to the exhalation from the skin. When, therefore, they become dropsical in their action, it is a transfer of function from the surface of the skin to their surfaces. However, this transfer of function implies additional organic labour and additional quantity of blood in the dropsical membranes; and dropsy has, therefore, been very properly regarded by sound pathologists as *a chronic inflammation of the parts which pour out the excessive fluid.* In dropsy of the chest there is chronic inflammation of the pleura; in dropsy of the belly, chronic inflammation of the peritoneum; and in *anasarca*, or dropsy of the skin, there is chronic inflammation of the cellular tissue underneath the skin.

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* Sanctorius, Dodart, Keill, De Gorter, Robinson, Rye, Linsing. Lavoisier, Seguin, Abernethy, Cruikshank, and others, give very discordant calculations of the amount of transpiration; but the above is an approach to the average in temperate climates and weather.

Now, suppose that, in addition to the want of vitality of the skin acting as a cause of its diminished excretion of sweat, *external cold* should play upon it, unable as it is to resist diminished temperature; it is easy to conceive that such cold would further drive blood from the skin, and further diminish the secretion of fluid there. But this would also further drive blood upon some of the membranes above mentioned, and engender dropsy of them.

Accordingly, it is found that *the condition of body which leads to functional dropsy is an irritated, congested, and exhausted state of the nutritive viscera, inducing diminished circulation and exhalation of sweat in the skin;* that *this diminished exhalation leads to increased exhalation in the parts affected by dropsy;* and that *the increased exhalation implies a phase of chronic inflammation in those parts.* As regards the exciting cause, *cold, and especially damp cold, applied to the skin, is the constant cause.*

In accordance with this view, it is found that, whatever causes and maintains a state of chronic irritation and exhaustion in the digestive viscera, conduces to dropsy. I have already alluded to spirit drinking as acting in this way; but excessive losses of blood bring about the same results; as also long-continued mental irritation, especially of the sorrowful kind; even sedentary habits, by inducing hepatic and stomach congestion, are sometimes the predisposing causes of dropsy. Nutrition, wrong at the centre, languishes at the surface, and external agents then help to increase the disordered functions which follow on the want of vital equilibrium. This is the history of all chronic disease.

Decreased absorption of fluid has been supposed to be a very efficient cause of dropsy; but the arguments for such a state are few and feeble, whilst those for *increased deposit* of fluid are many and cogent. There is the soundest ground for belief that all the phenomena of increase or decrease of fluids of *any* kind in the body, are dependent on increased or decreased *secretion*, and not on varying degrees of *absorption*, a process usually stationary in degree. And as regards dropsical collections, it appears inconsistent to speak of them as caused by diminished absorption, when that is never mentioned as a cause of preternatural accumulation of mucus, fat, bile, saliva, or any other secretion of the body; as well as extremely gratuitous to suppose that the vaporous fluid of the dropsy is alone deficiently absorbed, while the absorption of every other fluid and solid part goes on as before. If this were not the case, how could we explain the great emaciation which is so frequently attendant on dropsies?

All this time nothing has been said of the *kidneys*, upon which the whole blame of dropsy is so commonly laid. But, in truth, the kidneys have little or nothing to do *as a cause* with functional dropsy. They secrete very little urine in dropsy, but that is the *consequence*, not the *cause* of the dropsical irritation. In treating of *constipation*, I have shown how chronic irritation of the stomach, or of the brain and spinal cord, produces that state; how, in fact, they arrest the secretory activity of the lower bowel. Precisely in the same manner does dropsical inflammation of the chest, of the belly, or of the cellular tissue under the skin, produce a diminution in the secretory action of the kidneys. Nor are those organs singular in that respect; for dropsy arrests the secretion of the lower bowel itself, producing constipation of the most obstinate kind; of the skin, causing dry, harsh, parchment surface; of the mucous membrane, producing dry tongue, intense thirst, &c., &c. So that there is no difficulty in accounting for the inactivity of the kidneys in dropsy; the dropsical surface, with its preternatural accumulation of blood and organic activity, diminishes or arrests the healthy activity of the kidneys. This exposes the folly of turning all attention to the *forcing* of those parts to pour out urine, by the administration of medicines called *diuretics*, but which, in fact, can only act by setting up in the kidneys a counter-irritation to the dropsical inflammation of the belly, or other affected part. In short the parallel with constipation is complete here too; for purgative medicines act in exactly the same way with regard to the lower bowel and the cause of its constipation situated elsewhere. *Diuretics* draw, for a time, blood and organic energy *to* the kidneys *from* the dropsical part: *purgatives* do the like in the lower bowel. When the kidneys pour out urine, it is a sign that the belly, or other cavity, is relieved of its dropsical inflammation, not that the kidneys have relieved it; for simultaneously with *their* renewed activity is the renewed secretion of the skin, of the mucous membranes, of the liver, &c.; *all* are set at liberty by the cessation of the inflammation in question. Meanwhile, it may be said that the cessation of the urinary secretion throws a further quantity of fluid on the circulating blood, and thus augments the dropsical tendency; and the daily quantity of urine secreted, amounting to about thirty-two ounces, added to the liquid which is arrested in the skin, renders this a not unimportant consideration in estimating the quantity of fluid sometimes secreted in dropsical swellings.*

These pathological facts and reasonings have an important bearing on the TREATMENT OF FUNCTIONAL DROPSY; and that is my reason for dwelling on them. For, the irritation and exhaustion of the nutritive viscera being given, the feeble vitality and suppressed secretion of the skin being ascertained as *causes*, it renders sufficiently clear what the chief aim in treating the *effect*, the dropsical inflammation, should be. It is essential to re-establish the secretory activity of the skin, and thereby to counteract both the irritation of the viscera, and the dropsical inflammation. But as that inflammation is of the *atonic* kind, occurring as it does in enfeebled and generally bloodless frames, it behoves to give tone to the digestive organs, so as to insure the formation of good, nutritious blood. And these aims the appliances of the water cure are eminently fitted to fulfil.

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* Sanctorius estimates the urine at 16 ounces; Keill at 30; Prout at 32; Bostock at 40; Haller at 49. I have followed Prout. As regards the quantity of dropsical fluid reported to have been deposited, it is sometimes enormous. Seven thousand pints are said to have been voided by the same individual at several openings. Dr. Weatherhead (Lond. Med. Tran. 1828) gives a case where the belly was tapped 47 times, and the man lost altogether 566 pints. This operation has, however, been performed on the same person no fewer than 150 times (Phil. Trans. 1775), and upwards of 1000 pints of fluid have been voided (Scott. Med. Comm. 1778). In one case related by Storck, 100 pints of liquid were evacuated at one opening, equal in weight to about two-thirds of the whole body.

From time to time, cases are recorded of spontaneous cures of chronic dropsy by natural profuse sweatings. Even when the dropsy owns an irremovable cause, such as organic disease of the heart, nature sets up excessive action of the skin as a means of prolonging the struggle for life. In the water-treatment this is imitated. If there be no feverish action of the pulse, skin, head, &c., to require some preliminary wet-sheet packing, we proceed at once to sweat the patient; and this must be practised with nice reference to his organic powers, having care not to overstrain them by too frequent or too long sweatings. It is, for the most part, exceedingly difficult to excite the skin to sweat in dropsy; in which case we must be content to employ heating in blankets for a few days, and thus get on to the free action of the skin without taxing the head too much. Every one knows how cold the skin of dropsical patients always is, and how much better they are in a warm atmosphere; their kidneys are always more free in that condition. Sweating, then, is the chief remedy in chronic dropsy; and it should be followed by a shallow bath at 60°. Next to it comes the tepid sitz bath, which should be extended to twenty or thirty minutes. Hot fomentation of the belly is also recommendable, especially where there is a great degree of hardness and sharpness in the pulse; it should be practised for half or three-quarters of an hour each night at bedtime. Likewise, if that state of the pulse, accompanied by feverish heat, arises in the course of treatment, as it perhaps may from the stimulus of sweating, a towel packing should be had recourse to now and then, without, however, stopping the more important sweating process. The compress should be worn day and night, and the damp part of it should be well covered with oiled silk, or some impermeable texture, otherwise it is very likely not to become warm. In addition to these humid applications, frequent dry friction of the trunk and limbs should be employed. Water should be drunk very freely, even more than the great thirst requires; for it then not only tends to subdue the dry and feverish state of the mucous membrane, but also by its cold to induce appetite. It is almost needless to signalize the old error on this head; all educated medical men, and even many surgeon-apothecaries, now order free water-drinking to dropsical patients. The diet should be rather of animal character; and the vegetable matters taken of the highly nutritious kind, such as bread. Long previous disorder of the nutritive viscera has rendered the blood of dropsical patients exceedingly poor in the richer constituents, and what is called "watery" blood circulates, and maintains, by its unaptness for healthy nutrition of the solids, the *atonic* inflammation which is the proximate cause of dropsy. It behoves, therefore, to employ the digestive organs upon what will yield the greatest amount of these richer constituents, and not to waste their powers upon less nutritious matters: the rather if the appetite be deficient. But concentrated soups are singularly prejudicial in dropsy; the solid red meat, in preference to poultry, and other white meats, is the best form of animal food, which should be taken once at least daily, and twice on alternate days. Abundant exposure in the open air, if the weather be mild, should be made; but any exercise but passive is bad, at least until the kidneys begin to act, that is, until the dropsical inflammation is subsiding.

The earliest sign of this subsidence should be marked. When the pulse becomes slower and stronger, the skin warm and more supple, the mucous membranes moister, the temperature of the water employed for the shallow and sitz baths should be lowered by speedy degrees, and the *tonic* appliances made to bear upon the debilitated organic powers of the patient. This need not interrupt the sweating, which should be carried on simultaneously, so as to aid the transference of irritation, and to remedy exhaustion at the same time. And this should be continued until the renewed function of the kidneys and of the lower bowels is added to the healthier mucous membrane of the stomach and mouth, and the more natural skin; at which point the sweating should be gradually discontinued, and the tonic treatment made predominant, and at length sole.

This outline of treatment, well filled up by the physiological tact of the practitioner, will seldom, if ever, fail to cure chronic dropsy, which is purely functional, and does not depend on organic disease of some important organ. It proceeds upon the rational principle remedying the radical exhaustion and irritation upon which all the phenomena of the disease turn—the exhaustion of the nutritive viscera, and the irritation of the dropsical part. This the sweating does, rousing the secretory and digestive energies of the stomach and liver, and bringing about a transfer of irritation from the dropsical organ to the skin; the result of which is a release of the kidneys from the torpor of oppression imposed upon them by the organ in question, and a re-establishment of the secretions in all parts of the body. Their re-establishment insures a free exit for the watery portions of the blood in other parts than those dropsically affected, and these last, therefore, cease their excessive, and take on their natural amount of secretion. The dropsy is cured. But when you attempt, as is commonly done, to cure it by *diuretics*, remedies which are supposed to act upon and urge the kidneys, you do not succeed, because you begin at the wrong end; you treat the *effect* instead of the *cause:* the stoppage of the kidneys is *not, in any case*, the efficient *cause* of dropsy, and mere *diuretics* cannot cure it. It is said that *mercury* has cured dropsy, and therefore it has been placed among *diuretic* drugs; but that is a *non sequitur;* the *mercury* cured by its tonic action upon the relaxed blood-vessels of the dropsical membranes—an action it is well known to possess, and *not* by direct stimulation of the kidneys. In other maladies, mercury does not increase the quantity of urine. It is the only medicinal agent that has any chance of overcoming dropsical irritation: all the farrago of vegetable and saline messes, used as *diuretics*, are worse than useless; they have no power over chronic inflammatory action, and they disorder the stomach. Nor does mercury cure without leaving its mark behind in the shape of *ner-*

vousness, *neuralgia*, or some other form of neuropathic derangement.

Dropsy, which depends on *organic* disease of the heart, of the liver, or on the pressure of internal tumours upon the veins which bring back the blood to the heart, is not curable. But it is capable of much palliation by the water-treatment, as I have seen in three cases. The treatment is, as nearly as possible, the same as that above propounded; for the pathological condition is the same. The blood, impeded in its progress towards and through the heart, flows back upon the capillary *veins*, congests them, and this congestion acts as an irritant to the capillary *arteries*, of which the veins are a continuation. This irritation of the capillary arteries constitutes the dropsical state heretofore alluded to; and the stoppage of the secretions of the kidneys, of the mucous membranes, and of the skin, follows as in ordinary functional dropsy. Thus, for instance, as all the blood which returns by the veins from the viscera of the belly has to pass through the liver before it reaches the heart, the obstruction of the liver by organic irremediable disease, is a cause of *dropsy of the belly*, by throwing that blood back upon the belly, congesting the venous, and thereby irritating the arterial capillaries. Now, although in this case the mischief does not begin in the skin, yet a partial and temporary transfer of it to that surface, in the act of sweating, procures a relaxation of all the secretions for a time; and thus, with an irremovable cause at work, much of the distress of dropsy may be relieved, and its inevitably fatal termination postponed. I am confident of having prolonged life, in one instance, more than two years, by the palliative application of the water-treatment. In that case, that treatment besides causing temporary transfer of the dropsical inflammation to the skin, induced appetite and digestion, which enabled the nutrition of the body to go on for a considerably longer time than it could otherwise have done.

The following case of functional dropsy, which came under my notice a year and a half ago (1844), will illustrate what has preceded on that subject.

CASE XXXI.—DROPSY OF THE BELLY AND SKIN.

The patient, forty-six years old, had brought on a great amount of disease of stomach and liver by daily and incessant tippling of spirits, wine, beer—anything that came in his way. He became pale, bloated, short-breathed, and had the short, dry, ringing cough of diseased duodenum and liver. His urine, at first thick, became scanty; his feet began to swell and pit, but all his other limbs were shrunk, whilst the belly became more and more tumid. It was plain that dropsy was commencing. Recourse was had to medicines; he took abundance of diuretics, but the water steadily accumulated. Strange to say that stimulants were not withdrawn—the very agents which caused all the mischief. At length his friends contrived that he should reach Malvern, after vehement opposition on the part of his wife, who protested against the withdrawal of "all support," as she called the alcoholic liquors. When he came to me, his legs were hard with water all the way up, but of course more so towards their lower parts. The belly was immensely swollen—the upper part with wind, the lower part with water as well as air; and there was some tenderness on pressure, and when it was tapped sharply with the finger. The pulse was excessively rapid and jerky; the breathing thick, short, and husky. The thirst was intense; the hunger *nil*. The breath hot and acid. The eyelids bloodless. The skin utterly pale everywhere, without the slightest moisture, but glistening. Bowels very torpid, and their fæces colourless. Sleep very broken, and disturbed by horrid dreams. This state of things had existed for between four and five months.

The jerky and hard condition of the pulse, and the bad sleep, led me to use fomentations to the abdomen of this patient for a few days in the outset. These, with a general ablution in a shallow bath at 80°, the compress to the belly, and abundance of water to be drunk, constituted all the treatment for a week. He took very little food; and, it being exceedingly cold weather at the time, did not go out. The symptoms, however, for which this treatment was employed, abated sufficiently to permit of the sweating process, to which he was subjected on the ninth day after his arrival. It seemed immediately to act upon the visceral irritation; the thirst became far less intense, the bowels acted a little better, and the urine was triflingly increased, after four days' sweating. This daily sweating, a sitz bath at 85°, taken twice a day for twenty minutes, the shallow bath as before in the early morning, the compress on the stomach day and night, and eight or nine tumblers of water in twenty-four hours, made up the treatment for the following three weeks. He ate a little meat once daily, and took milk and bread morning and evening. Under the operation of the above plan, he gained an excellent appetite and good sleep; his bowels improved vastly in quantity and quality of evacuation; as did the kidneys, although the urine was not so copious as might have been expected, looking to the immense quantity of dropsical fluid accumulated.

The cause of this was shown in the sixth week of the treatment. After forty-eight hours of considerable constitutional disturbance, and intolerable tingling and itching of the legs, enormous blebs made their appearance in various parts of the limbs, filled with the dropsical liquid of the skin. Some of these I pricked and emptied, and others I left alone. But as the latter enlarged by the liquid burrowing, as it were, I opened them too; the rather, as all of them, when opened, continued to discharge large quantities of liquid day and night, which, in the course of ten days, reduced the legs to a very moderate consistence and size. In several of the blebs, the skins underneath took on a purplish hue, and threatened to give trouble and anxiety; but compresses of *hot* water altered their appearance in four or five days. Here, then, was a crisis such as I do not remember to have seen described—dropsy of the cellular membrane underneath the skin departing by blisters raised upon the skin. It accounted for the small increase of the urine, which was quite insufficient to account far the relief of both dropsical parts—the belly and legs—but was sufficient to account for that of the belly; whilst this exudation from the legs disposed of *their* swelling.

Total reduction of the dropsical swelling in both parts was effected by the end of the eighth week of treatment. And as, after the appetite appeared, it never disappeared or diminished, he was gaining ground in general health the whole time of the immense discharge from the legs, which continued, in all, for three weeks. During that time the sweating was only employed four times, as a means of procuring greater activity of the bowels, which it always achieved. Otherwise nothing was done but wearing compresses on the legs, the morning shallow bath, and two tepid sitz baths, with the same quantity of water as before. After the removal of all dropsical action, he was submitted to the tonic parts of the water-treatment for three or four weeks more, by which, and abundance of fresh air, he came to make blood rapidly, and gain flesh, and colour, and strength of limb. I am told that his revived appearance and powers astonished those who had seen him before he left for Malvern, as they thought, dying of dropsy, but likely to be hastened to his end by the treatment he was about to undertake.

I have treated two other cases of general dropsy of the skin with success, and in a very similar manner to the above. But in them no blebs arose, and the renewed and copious action of the kidneys was the only signal of diminished dropsical action. Both cases were of persons worn out by previous excesses, and having deteriorated digestive and bloodmaking powers: in one of them mental distresses aggravated the difficulties of the case. I have had no opportunity of treating by the water cure any case of functional *dropsy of the chest;* but there is no ground for doubting the benefit which would be derivable from that mode of treatment, the morbid condition being the same as that of *dropsy of the belly*, which, as well as *dropsy of the skin*, is perfectly curable.

§ 4. SKIN DISEASES.

All morbid phenomena have been properly regarded by scientific medical observers as the result of efforts on the part of nature to rid her noble parts of some grievous mischief.

The phenomena in question are those of perturbation of the entire nervous and circulating systems; perturbation which only ends in the critical concentration of irritation on some excretory organ, and critical termination of this latter irritation in augmented excretion. Strictly speaking, *fever* is a *skin disease*, the skin being the organ to which the visceral irritation is transferred. If that irritation be too great for the organic power of the viscera entirely to transfer to the external surface, it remains in them, destroys their function, and, with that, the life of the individual. If the viscera *do* possess sufficient power to effect the transfer in question, the irritation thus set up in the skin is eventually relieved by the copious secretion of sweat from the overloaded and distended blood-vessels of the skin; both viscera and skin recover, and the life of the individual is saved.

Now, when a certain and very intense phase of visceral irritation obtains, more especially when it has been excited by the presence of poisonous matter in the circulating blood, an amount of irritation is thrown upon the skin, so great as to raise acute inflammation there which ends in small points of *watery* secretion called vesicles, or pimples, such as *chicken-pox;* or of *purulent* secretion called pustules, such as *small-pox.* At other times the inflammation of the skin thus produced, spreads abroad, is diffused, rather than concentrated in the points I have mentioned: and then we have such diseases as *measles*, *scarlet fever*, *erysipelas*, and other *rashes.* All these maladies, although named according to the phenomena exhibited in the *skin*, are in fact only the outward and visible signs of an inward, and, if retained, destructive irritation of the primary nutritive *viscera.* They are, in short, ordinary fever, with the addition of an eruption; and the amount both of fever and of eruption has reference to the amount of internal visceral irritation, and of the organic power of the viscera to transfer it to the surface. We find in all these eruptive fevers, that if the eruption be not free and sufficient, the general perturbation is greatly increased, and the viscera often sink under their irritation and the effort to throw it out: it is thus when *measles*, *scarlet eruption*, &c., kill. Or, if they be sufficiently exhibited, their sudden suppression kills by throwing back upon the viscera the irritation of which they had rid themselves by the eruption itself.*

Such are the pathological facts with regard to *acute* diseases of the skin. What is the phase of visceral irritation which produces, or wherefore it produces, one form of eruption and not another, is one of the many *arcana* which Nature has not yet unveiled to the student of diseased life; and, in all probability, never will. But the process of their origin, which I have briefly developed, is one of the best-established points of pathology; and the observations of practice amply confirm it, as I shall presently show.

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* In speaking of the pathology of skin diseases, it is necessary to refer to the anatomical connection between the *internal mucous membrane*, which lines the viscera, and the *external mucous membrane*, or true skin, which covers the body. They are, in fact, continuations of each other by the different orifices of the mouth, nostrils, anus, &c. The *inner* membrane pours out mucus, which is re-absorbed, or assists in the

Well, precisely the same mode of origin applies to *chronic* skin diseases as to *acute*. There never was, and never will be, a chronic skin disease without some phase of visceral irritation; and skin disease is the manner in which that irritation is at once exhibited, and kept from exciting more serious phenomena in more important organs. Any one who chooses to observe will see this verified; he will see an external eruption disappear, and giddiness, headache, sickness, indigestion, heart palpitations, bronchitis, asthma, nervousness, mental irritation, or even insanity, ensue; and he will see these ailments disappear with the re-appearance of the eruption. He will see, further, that mental disturbances and errors ot diet, both of them acting through the primary nutritive organs, *aggravate* the skin disease, if they be within certain limits; as if the additional irritation to those organs was just sufficient to urge them to a more vigorous eruption on the surface; but that if they be excessive, they *suppress* the eruption and produce serious internal mischief. In this last case the visceral irritation is so much aggravated, and the viscera themselves so oppressed in their function, that they can no longer effect the transfer to the skin. The operation of sudden surprise, especially if it be painful, will often dry up a moist eruption or a chronic ulcer, because it excites a degree of visceral irritation greater than that which is on the surface, which is therefore *drawn in*, not *repelled*. On the other hand, a lingering mental process, such as anxiety, causing a stream of excitation to proceed from the brain to the nutritive

functions of the viscera; the *outer* membrane pours out mucus also, but which, being chemically acted on by the oxygen of the atmosphere, thickens, hardens, and forms that which is commonly called *the skin*, but is, indeed, only inorganized mucus. This anatomical and functional parallel between the two surfaces, aids the well-known pathological facts recited in the text regarding the visceral origin of skin disease.

viscera, generates there an amount of irritation which is proportionately shown on the skin, and all forms of chronic cutaneous disease are thereby *increased.* Hence the extreme difficulty that is always found to attend the treatment of skin disease in persons oppressed with business or sorrow. If the *indirect* excitement afforded by the brain to the nutritive viscera produces aggravation of skin complaints, it may be readily imagined that their *direct* excitement by food of a stimulating kind is equally calculated to cause similar results; and we accordingly find that diet of different kinds has a most marked effect on those complaints, and is, indeed, a very frequent and sudden originator of them, as in the outbreak of nettle-rash from eating shell-fish, of pimples and itching of the scalp from taking vinegar, pepper, almonds, &c.

But aggravation and suppression of skin disease are also influenced by agents directly applied to it. Variations of temperature, cold, dry, easterly winds, particles of dirt, the residence of the moist or dry secretion of the morbid skin itself, friction of garments, &c., tend to *aggravate* the cutaneous disorder; for they all afford to the exhausted and distended blood-vessels of the skin sufficient excitation to cause them to contract and then relax again more than ever, thereby augmenting the exhaustion and distention. Scratching an itching part acts in this way; whilst you scratch, you stimulate the blood-vessels to contract and get rid of their blood; but your nails, and the stimulus they gave, withdrawn, the vessels become more and more relaxed, until *soreness* takes the place of *itching.* If an agent of a very stimulating character be applied to the chronic skin eruption, it may so completely rid the vessels of the skin of their blood as to cause it to be thrown upon other parts, and those internal and important; and an irritation is there and then set up which prevents the return to the skin, whose malady is thus *suppressed.* In this manner it is that divers washes, ointments, and plasters set aside the cutaneous only to raise up far more serious disease within; many ladies' lives have been perilled, and some actually lost, by these attempts to remedy a pimpled or a florid face.

This rationale of the leading facts of skin diseases was necessary, in order to the proper understanding of the philosophy of the water-treatment as applied to them. That treatment proceeds upon the fact, that nature throws skin disease out in order to save her nobler parts. To reduce the irritation of those parts on the one hand, and, on the other, to rouse them to further efforts directed towards the skin, are the principal aims and results of the water cure. The wet-sheet packing is the great agent in the majority of the diseases under consideration; it peculiarly reduces internal irritation, is soothing to the external irritation, and at the same time renders the skin the particular point on which that within would be thrown. Thus favouring the evolution of the internal disorder, the first effect of the application of the water-treatment is to *increase the skin complaint.* For this the patient must look in undertaking it, and without it he may be assured that he is not making much progress. It is an imitation and improvement on Nature; she makes the skin disease for a salutary purpose, and we increase it for the same purpose. But the time comes when there is less and less *internal* irritation to throw out; *then* does the *external* one begin to fade also. Go on steadily with the treatment, and both are *extinguished*, not *transferred;* an eruption once disappearing from water-treatment, never re-appears, until you apply the morbid causes to the *viscera* again, for it tears up the *root* of the skin complaint. There are some skin complaints occurring in persons of scrofulous habit of body, such as *scaly tetter (psoriasis)* and *dandriff (pityriasis)*, which require an occasional sweating; but the wet-sheet packing may be said to be the principal general remedy in all skin complaints. Of course, as these last are only symptoms of internal derangement, other means applicable to the restoration of the general health are necessary, such as sitz baths, occasionally the douche, the dripping sheet, &c. In most of them, also, copious water drinking is recommendable, where the circulation in the head is calm; for water drinking has a vast influence in determining visceral irritation towards the surface.

Local applications are necessary where they can possibly be maintained over the part. The temperature of the compress, however, varies with the amount of itching or soreness; great itching requiring cold, frequently changed; and great soreness, which is generally subsequent to the itching, requiring tepid compresses. Warm fomentations also are required when there is a mingling of itching, tingling heat, and soreness, as in *chronic erysipelas.* In *moist tetter (impetigo)* the itching and soreness frequently alternate, and the local means must vary accordingly. These local means show very strongly the excessive secretion of the mucus, which dried, constitutes the outermost layer, or what we ordinarily call the skin; for the compresses constantly give out, when washed, after being used for a few hours, matter which renders turbid the water in which they are placed. And this excessive secretion of *outer* or unorganized skin speaks for the excessive accumulation of blood in the *under*, or true skin, and for the activity of secretion consequent on that accumulation.

The diet is important in skin diseases. In the majority of cases, abstinence from, or a very small proportion of, animal food is desirable, farinaceous matters being substituted. But reference must always be had to the condition of the stomach and other digestive organs, whether they be in a state of nervous or mucous indigestion; the general rules for which will be found under those heads. All condiments are exceptionable; even salt should be taken with extreme care; and all beverage, save water, should be avoided.

The clothing should by no means be always light, as is often supposed to be inculcated by the water-treatment. Highly sensitive as the morbid skin is to variations of temperature—to winds and electric changes of atmosphere, it is often necessary to have some non-conductor of heat and electricity, such as flannel, next to the morbid surface, to shield it from distressing excitement, and maintain uniformity of sensation, as nearly as it is possible to do so. Indeed, one of the reasons for the beneficial operation of the compresses, is to be found in the uniform sensation and soothing which they cause and maintain on the irritated surface. But much will depend, in this matter, on the general capabilities of the individual, the re-active energy, the digestive activity, the nervous susceptibility, &c.; for skin disease occurs in persons of the most opposite constitutional powers, in the poor-blooded as well as the full-blooded.

As the skin maintains an exquisite sympathy with internal irritations, both of the digestive organs and the brain, and is, moreover, directly and constantly exposed to the air and its various states of temperature and electricity, it will surprise no one to learn that, although the water-treatment is almost infallible in the cure of its diseases, the duration of the treatment is, under the most favourable circumstances, long; the rather, as all those likely to fall under its operation are of long standing. Of course, the length of treatment bears a proportion to the standing of the malady. It also is much influenced by the mental condition of the patient; care or sorrow inveterating the disease and prolonging its cure. In all cases the patient must expect to have it rendered much more severe and *sore*, though *itching*, if it exists, is always allayed, or converted, as I have said, into soreness. When skin disease comes on in old age, or is coincident with fulness of the head, it is usual to consider how far it is advisable to interfere with it, Nature in both instances often making on the skin a diversion in favour of some internal vital organ. But with the water-treatment this objection does not hold, inasmuch as it actually, for a time, *increases* that diversion, and ultimately gets rid of the internal cause of it. Accordingly, I have treated, and should not hesitate always to treat, cutaneous disorders in both these cases.

The principle of treatment in all skin diseases being the same, the details are also very similar, the differences being only such as are rendered necessary by age, constitution, &c., and are in degree alone. Some persons require and bear a more rapid and continuous application of the means, whilst the frames of others become fatigued, or too much excited by them, and they accordingly require to be spread over a longer period, or intermitted from time to time. All this is a matter of observation, experience, and tact, and cannot well be conveyed in writing. I shall therefore only state the chronic skin diseases which I have treated with water, and the results.

1. *Chronic Erysipelas* in a person of fifty-two years: had existed eight or nine months about the left leg and loins. Became very sore, and exuded purulent matter after five weeks of the compress; was cured in eight weeks; looseness of the bowels during the last two weeks of treatment.

2. Another case of the same disease in a lady of forty-nine years of age: had existed two years with variations of intensity, over the throat and chest; was cured in eleven weeks without any critical action, either local or general; but became very sore during the treatment.

3. *Scaly Tetter (Psoriasis)* in a man forty years of age,

in whom it had existed upwards of twelve years, and had possession of the greater part of his body (*Psoriasis diffusa*). With occasional intermissions and relaxations of treatment, it required ten months to cure this case. Wherever a compress could be applied, the skin gave out enormous quantities of creamy stuff, which was regularly scraped off, and the packing-sheet always made the water exceedingly turbid. After some months of this, the skin became sore and gave out very little limpid fluid. This ceased, and then the skin took to sweating on the smallest exertion. Tonic means stopped this, and the patient was well.

Scaly tetter is one of the most frequent skin complaints presented for treatment. I have treated many other cases of it, but none of such long standing as the above.

4. *Dandriff* (*Pityriasis*). I have cured one case of *Red Dandriff* (*P. rubra*) in a man sixty five years of age ; and two cases of *Variegated Dandriff* (*P. versicolor*), one of them of a man of forty-seven years, and the other of a man thirty-five years old. The first of these cases required four months, the second three months and a half, and the third four months.

5. *Itchy Rash* (*Prurigo*), one case of the *Prurigo pudendi muliebris*, cured in two months. The patient was sixty-one years old, and had great irritation of stomach, with much mental distress : she got better much sooner than I expected.

6. *Shingles* (*Herpes Zoster*) in a youth of twenty years of age. Wet-sheet packing, and copious water drinking, caused vomiting and immediate relief of this painful eruption in twelve days.

Skin disease is one of the *opprobria medicinæ*, but from the experience I have had of the effect of the water cure upon it, I cannot doubt that it will no longer remain so, if medical practitioners will cease to countenance in the community the prejudice which exists regarding the repulsion of eruptions from the application of cold water. If I wished to *strike in* a skin complaint, I should give the patient a succession of strong purgative doses, and apply a stimulating ointment or lotion to the diseased skin ; the latter would soon be exchanged for some internal malady, but would be said to be cured ! And such, indeed, is the ordinary *cure* of skin diseases! But the true history of their origin and progress forbids us from crediting such cures. The water-treatment, proceeding on the natural indications of this class of diseases, affords the only opportunity for a *natural and permanent* removal of them, and it *ought* to be employed in them by all who would gain health for their patients, and credit for themselves. A vast field of usefulness is open in that direction.

PART III.

PRINCIPLES AND DETAILS OF THE WATER TREATMENT OF CHRONIC DISEASE.

CHAPTER I.

GENERAL REMARKS ON THE ACTION OF THE WATER TREATMENT.

The Water Cure acts by calling the power of Nature into play, and assists Nature by imitating her—Negative means of the Water Cure—Particular seat of the natural restorative power—Positive means of the Water Cure—Their action on the nutritive nerves of the skin—Thence upon the viscera, both directly and indirectly through the brain—Consequences of this action on the viscera—Their efforts at self-restoration leading to better circulation of blood—Better blood a consequence of better circulation—Change of the mass of blood by water drinking, air, and exercise—Triple result of the action of all the means of the Water Cure—Rationale of critical action—Violent use of the Water Cure, as well as a Crisis, unnecessary for cure.

It is not my purpose to prolong the present Part of this volume beyond what is necessary for a sufficient account of the mode in which the water cure affects the organization generally, and the advantages it has over other plans of treatment in certain diseases. This will form the subject of the present chapter. And another chapter will be occupied with an account of the probable action of each of the processes of which the water cure is composed, and with the equally important subjects of diet and exercise. In doing this, I shall carefully avoid the rhapsodical and exaggerated stuff which has too often been applied to a subject of *serious* import, since it implicates the life, and the physical and moral comfort, of the large community of invalids.

1. The water cure is essentially a *hygienic* mode of treatment; that is to say, its appliances are such as belong to agents which are playing upon the body in all states of health. Food, air, the stimulus of the will as operating in muscular exercise of the body, the stimulus of the thought as operating in exercise of the mind, the stimulus of water taken internally as operating on the chemico-vital changes of the frame generally, and used externally as augmenting those changes in the vast and highly sentient surface of the skin in particular—these are the means by which, inasmuch as they are *at all times* necessary to the *healthy existence* of the body, the water-treatment proposes to cure its *diseased existence.* Forming part of the ordinary and inevitable sustainers of life, they have been called *natural* remedies in contradistinction to those which, from their non-necessity under ordinary circumstances, have been called *non-natural.* Hence the water-treatment includes and relies upon the regulation of diet, or of the *primary nutritive organs;* of air, or of the *secondary nutritive organs;* of the mind in thought and action, or of the *animal nervous system;* and of the great act of nutrition carried on in the extreme blood-vessels, and increased or decreased according to the applications of *water.*

But this reliance on such means implies reliance on the organs alluded to. It supposes a self-restorative power in them; a power which, within certain limits, is capable, and is *alone* capable of curing *any* disease, *provided the organs be placed in the best possible circumstances for exercising it.* It were impossible in this place to enumerate all the instances which establish beyond a doubt the existence of such a power in the body, and to name *fever* as one great example of its exercise, is sufficient. Writers on the water cure have spoken of this power as a discovery of their own; but great names in medicine have maintained its existence, and in great part relied upon it, from the earliest times. HIPPOCRATES, although he administered physic, constantly insists on the necessity of avoiding it until the body has well concocted its humours: that is to say, until the organs have made show of the direction by which they are about to relieve themselves;

and the modern HIPPOCRATES, SYDENHAM, is ever directing the practitioner to observe, to watch, to guide the disease, but not to meddle with the *natural* progress of it. One of the most learned of living medical writers says: "When healthy properties are impaired, we know no agent by which they can be *directly* restored; when vital action is perverted or deranged, we possess no means of *immediately* rectifying it, but we must be satisfied with using those means under which it is most likely to rectify itself." This truth was published,* and quoted by me in my "Simple Treatment of Disease," before the water-treatment was at all known in this country; and on it was based the discontent with the usual mode of medicinal treatment, and the belief that it did more harm than good in disease, which I there expressed. In fact, by it the body is placed in the most *un*natural position, and its efforts at relief constantly *thwarted.* Disease, which is quite as natural a process as health, is not allowed to go on as nature would; the internal organs, whose morbid action alone can cause death, are made the arena for all sorts of conflicting and inflicting medicinal stimulants; and, between the action which these excite and that which originally existed, their vitality fails, their efforts towards restoration flag, and their functions are at length extinguished. I have already shown in a former part of this volume (page 40, *et seq.*), how, when this meddling treatment does not kill, it seldom fails to convert acute into chronic disease. Nothing can be more flagrant than the want of sound physiological knowledge displayed in the employment of this ultra drug treatment. Its vast deficiencies as a *curative* plan, its actual *opposition* to the curative attempts of the organs, its coarseness, and its inconsistencies, have obliged the better part of the medical profession to abjure this fearful system of active drugging, to trust more and almost entirely to Nature, and to help her only when she seems inadequate to the task of self-restoration. But whilst enlightened men, such as Sir JAMES CLARKE, Dr. FORBES, Dr. WATSON, and others, see clearly and act skilfully on this great truth of the body's renewal of health, it is still "a shut book and a sealed leaf" to the herd of surgeon-apothecaries constituting the mass of the profession, who are sent forth, with a miserable modicum of physiological knowledge, but an extreme subtlety in the various ways of mixing physic, to propagate chronic disease, and perpetuate medical ignorance, rashness, and charlatanism. In spite, however, of this mass of ignorance and narrow prejudice, the evil has become so shameful, that even the leading literary organ of drug medication has been obliged to lay bare the disastrous consequences that have all along attended its practice in this country. In a long article published in the January (1846) number of the "British and Foreign Quarterly Journal," Dr. FORBES has told some hard truths concerning drug medication, which must be highly unpalatable to the hybrid prescribers and vendors of physic, who call themselves professional men. After a somewhat one-sided review of *homœopathy*, he falls foul of *allopathy*, unsparingly denounces the mischief it has effected, and suggests a reform of medical art by the reintroduction of a third power—"THE POWER OF NATURE." Yes.

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* In "Elements of the Practice of Physic." By Dr. Craigie. Introduction, p. 26, published in 1837.

"Naturam expellas furcâ, tamen usque recurret."

Not all the sordid interests involved in the sale of drugs can prevent the intrusion of the omnipotent truth, *that in the body itself is to be found the agent of restoration, and that Art only helps the body in that agency.* To this confession, the very expositor of the *spurious* art of drugging (for it does not merit the name of art), is compelled to come; to the confession, 1stly, "that in a large proportion of the cases treated by allopathic physicians, the disease is cured by Nature and not by them; 2ndly, that in a lesser, but still not a small proportion, the disease is cured by Nature in spite of them—in other words, *their interference opposing, instead of assisting the cure;* and 3rdly, that, consequently, in a considerable proportion of diseases it would fare as well, *or better*, with patients, if all remedies, *especially drugs*, were abandoned."*

To the power of Nature then, that is, to the vital energy of the organs, the scientific practitioner of the water-treatment looks in the first instance. He does not for a moment suppose that his processes have anything in them which, *of itself*, shall effect a healthful change in the body. True, it has been advanced that water has a specific

* Loc. cit. p. 257.

effect on the body in the same way that *quinine* has; but this is sheer nonsense, and strongly indicates ignorance of the water cure on the part of the propounder. When I say that the wet sheet reduces the pulse, I mean that it places the diseased organs in a condition to get rid of their irritative state, and thus to send a smaller amount of sympathetic excitement to the heart. When I say that large water drinking excites the pulse and circulation, I mean that it places the organs generally in a condition more speedily to bring about those chemico-vital changes, which are dependent on the presence of the blood, which is therefore more rapidly circulated. When I say that the sitz bath tends to open the bowels, I mean that it puts the lower bowels in a condition to receive more blood into their secreting surface, by placing other parts—the stomach, liver, brain, or spinal cord—in a condition to get rid of their irritative state. In fact, all the results of water-treatment which we behold are secondary; the *vis vitæ* is primarily acted on by the means employed, and *it* induces the phenomenal consequences we behold.

II. This sound basis of treatment—namely, that the organic energy of the body is to cure its disease—being taken, it is necessary to remember that that energy may be deficient for the purpose, and may thus tend towards destruction or organic disease rather than cure. Hence the necessity of Art—of Art which seconds the objects of Nature, and aids its flagging energies, but in no case runs athwart them. In chronic disease, this necessity especially arises, from the circumstance that the organs, in their intimate and minute action, (see Part I., page 15,) are in the extremity of feebleness, and make but small efforts of self-restoration; chronic disease, in fact, almost always tending towards organic, incurable disease, when left to itself. In saying that Nature is the only curative power, the very presence of *disease* implies that that power is deteriorated and requires aid. The water cure affords it, and is one of the best instances of Art applied only in seconding the indications of Nature. Testimony to this effect is given by the leading journal of drug medication, already quoted. Dr. Forbes there says—"This mode of treating diseases (Hydropathy) is unquestionably far from inert, and most opposed to the cure of diseases by the undisturbed processes of Nature. *It in fact, perhaps, affords the very best evidence we possess of the curative power of*

Art, and is unquestionably, when rationally regulated, a most effective mode of treatment in many diseases. Still, it puts in a striking light, if not exactly the curative powers of Nature, at least the possibility—nay, facility—with which all the ordinary instruments of medical cure, drugs, may be dispensed with. If so many and such various diseases get well entirely without drugs, under one special mode of treatment, is it not more than probable that a treatment consisting almost exclusively of drugs may be often of non-effect—sometimes of injurious effect?"* Such admissions in the pages of such a periodical, are strongly significant of the growing conviction in the high places of drug medication that the water cure is *not*, as it was there loudly and unsparingly denounced, a systematic quackery, but that it *is* the TRUE MEDICAL ART—the Art which watches Nature's tendencies, and aids her in her necessity.

III. This aid is given in a negative and in a positive manner. The *negative* means consist in the withdrawal of the predisposing and exciting causes. In this there is no compromise; there *can* be none. If there be irritation of the stomach inducing costiveness, it is absurd to expect the bowels to act whilst the aperient medicine is keeping up that irritation, apply what *positive* treatment you may. If there be congestive or apoplectic fulness of the head, all the positive treatment in the world will not avail, so long as huge feeding, stimulating drinks, tobacco-smoking, venereal excesses, &c., are persevered in. In the first part of this work, I have endeavoured to show the very minute yet highly irritative action of a part affected with chronic disease—how, in their extreme organic feebleness, the ultimate blood-vessels are more than usually sensitive. How, then, is this mingled sensitiveness and feebleness to be remedied, so long as irritants, however small and however applied, be permitted? It cannot be; and he who allows his patients to persist in any such causes, understands nothing of the water cure, or nothing of honesty. Practitioners of drug medication say that we, the professional adherents of the water plan, "may well cure patients, for we insist on certain abstinences in diet, personal habits," &c.; and that "these and not the water recover them." The latter I will anon show to be incorrect; but the former is altogether true, and suggests the putting of the question to the objectors—"Why do *you* not also insist?" But then again, not much would be gained, so long as *medicinal* irritants are maintained; to forbid roasted meat, least it should irritate the stomach, and at the same time to administer a daily aperient or tonic, is an ignorance or affectation that is scarcely comprehensible, although of daily occurrence. (See a curious instance of this at page 110.) It would be foolish and dishonest to deny that the withdrawal of morbid causes to be found in diet, bad personal habits, mental excitation, &c., form a very important—nay, indispensable portion of the water-treatment; and that this latter would be curtailed of the greater part of its usefulness without it. Patients who have recourse to that treatment must make up their minds to drop various darling weaknesses, or else to receive but small benefit.

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* Loc. cit. p. 254.

The cessation from taking drugs is a striking item in the negative means—*i.e.*, in the withdrawal of causes. To it is very much owing the great and immediate relief which most patients under the water-treatment experience in the first week or two; the absence of the daily irritant leaving the viscera at rest, instead of rousing in them morbid excitement, which is reverberated upon the animal nervous system, inducing all manner of diseased sensations, and especially calling the attention of the brain to what is going on in the viscera. Without this withdrawal, no lasting benefit is to be obtained from the water-treatment. It may be expedient to treat a case with drugs alone, or with water alone; but to say that chronic disease can be *cured* by a mixed treatment of water and drugs, is a ridiculous contradiction, or an interested compromise; a net, in short, thrown to catch two extensive sets of persons—the simple and the prejudiced: an excuse for gleaning from all fields. Imagine a patient who, having tried all kinds of drugs, has added the irritation they produce to that of the original malady, placing himself under a medical treatment which, while it professes to reduce the irritation arising from both sources, at the same time keeps alive both; so that the morning wet-sheet packing takes off the visceral disorder of the previous day's dosing, and even prepares the body to be more keenly irritated by the dosing of the current day! This is like emptying the right-hand pocket to pay the left: the person carries just the same amount: at best, the patient is *in statu quo*—more probably *in statu pejori.* I speak not now of the modicum of water applications which have always been more or less employed by medical practitioners, such as partial spongings, short hip baths, &c., but of the systematic employment of the various processes which have been introduced of late years under the name of the "Water Cure;" and I maintain that a combination of that treatment with the administration of drugs for the purposes of *cure*, is altogether fallacious, and an error by which the patient, at least, must suffer. Nor is this a mere assertion of doctrine; on three or four occasions, I have been persuaded to adopt such a combined plan, and have soon had to abandon it at the request of the patients themselves, who found that medicines administered whilst the body is under the operation of the water-treatment excite a much more intolerable irritation even than they did previously. They who profess to use both means are scarcely authorized to attribute the results of their treatment to the water system, nor to call themselves professors of that system; and their combination of drugs, bleeding, wet-sheet packing, douching, &c., is infinitely more dangerous than simple medication by drugs.* And this will be discovered before long.

The withdrawal of the mind from harassing cares and occupations, is another of the negative means included in the water-treatment of chronic disease. That form of disease has always existed sufficiently long to involve the brain more or less in irritation. Upon the brain, thus prepared, circumstances of disagreeable and painful character fall with double intensity, and exasperate its irritation, which is then passed on to the nutritive viscera, augmenting *their* disorder. If such circumstances can be withdrawn, the physician has only to deal with the chronic *visceral* irritation, which he may subdue when the brain is quiet, but which he could not touch so long as that organ perpetually added fuel to the flame. Moreover, this comparative freedom of the brain from excitement is required in the water-treatment, because the effects of that treatment are brought about through the instrumentality of the nervous system, of which the brain is one of the great centres. If it be oppressed with care, and be made to labour exceedingly at the same time, for the restoration of the body, the chances are strongly in favour of its breaking down between the two loads; and I have seen an instance of this. Therefore let no one attempt the systematic water-treatment who is unwilling or unable to rid himself, for the time being, of business and its botherations, including the daily score of "esteemed favours" from correspondents; he will assuredly get more harm than good under such circumstances. Neither, when *grief* is doing its sad work, is there any prospect of improvement to chronic disease from the water cure; "mens agitat molem," and it is not safe to agitate the body in two ways at once. I have seen a sudden invasion of nonsensical *love* arrest the improving progress of a neuralgic case, which, under the water-treatment, was advancing steadily towards complete recovery. The water could not wash away the feeling, but rather seemed to render it more painful and ridiculous:

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* In all that I have put forth concerning drug medication, I wish it to be understood that I am speaking of its application for the cure of *chronic* disorder. As I have stated in the text, none but the less educated members of the profession think now-a-days of *dosing* for such disorder. Most of the class of physicians give medicine in small quantities, and trust more to the operation of natural means, diet, air, habits of life, &c. Nevertheless, they cannot therewith cure the great majority of chronic diseases; and the fault is in the instruments with which they work. But cases will always occur in which it is at least expedient to employ drugs; and it is absurd to suppose they can ever be entirely dispensed with. A strong man gets bilious, but is obliged to continue his occupation; let him take two or three grains of blue-pill, followed by an aperient draught, abstain from animal food for twenty-four or forty-eight hours, and he will be well without ceasing from his vocation, and without evil results. The evil lies in making no change of diet when under, and for some time after, the irritation of the drug, and in the strong temptation to reiterate the causes when the effects can be so readily disposed of. Then begins the *abuse* of the medicine, for which, in the majority of instances, both patient and practitioner are to blame. At the end of all this comes *chronic* disease, which all the drugs in the world cannot cure.

> "Ah mihi! quod nullis amor est medicabilis *aquis*."

The worst of the affair was, that the *neuralgia* was more painful, too, and did *not* wear out, although the amorous folly did.

For the same reason as that given above, it is essential to withdraw the mind from the excitements of gaiety and its usual concomitants, in this country, of hot rooms, strong lights, &c. We are told that water patients (some in scarlet fever, too!) hold large dancing parties at Gräefenberg, and all get quite well. If so, there must be something in the air of the place which enables persons to resist the ordinary operation of causes which, nearer home, certainly deteriorate the patient's condition whilst under the action of the water-treatment. I have seen such consequences again and again. But "distance lends enchantment to the view;" Gräefenberg is 800 miles off, and travellers must not go so far to see *ordinary* occurrences. Be this as it may, there can be no question that, on account of the temptations to gaiety, the racket, noise, and distractions of large towns, the

"Fumum et opes strepitumque Romæ,"

the water-treatment of chronic maladies cannot be successfully practised there. It has been tried, and utterly failed in three large towns of England—namely, Liverpool, Bath, and Cheltenham; and I believe a similar result has obtained in various continental towns. In rural places all these drawbacks are avoided, and the quietude alone is an important adjuvant to the negative treatment of persons whose sensations have been rendered exquisitely acute by previous morbid causes, and whose organs are now to be roused by the water-system to an attempt at their self-restoration. So necessary do I think this consideration of locality, that even the *proximity* of a large, dissipated town, is, in my belief, objectionable. Never did I know a patient who ran up to London for two or three days, return so well as when he left Malvern.

So much for the negative means of the water cure.

The *positive* means of the hygienic water-treatment include all the applications of water, from the compress and foot bath up to the sweating process and the douche, the taking of water internally, food, exercise, and clothing. As the detailed consideration of these will fall to a subsequent chapter, I only allude to them here as agents which, whilst the *negative* means tend to disembarrass the morbid organs, tend to bring them into positive and active effort for the recovery of their healthy functions. Nature, entirely freed from the unwholesome operation of diet, drugs, mental cares, &c., would certainly be left in the best possible position for re-assuming her healthy actions, and, in very many slighter instances, she would do so. I constantly have patients applying to me, to whom I say, "You would recover by retiring to a farm-house, having care of your diet, rising early, taking appropriate exercise, breathing abundant pure air, &c.; and this would require to be continued for eighteen or twenty-four months. What the water-treatment can do for you is to curtail that period by one-half, or two-thirds." And so it is in these slighter cases; withdraw irritations, and bring neglected organs into more active play, and you lend a helping hand to those that are overworked and morbid. Good food, applied to the stomach, helps to make good blood; pure air, abundantly applied to the lungs, helps to perfect that blood; the same air, applied to the skin, draws that blood towards the outer surface, thereby relieving the inner visceral surface; exercise and early rising promote the circulation and waste of that blood, thereby ridding the frame of a diseased fluid, at the same time that better digestion is forming a better fluid, which at length brings about healthy nutrition; such is the process by which retirement and country life renew the jaded and chronically diseased frame. (See page 68 *et seq.*)

Now, the appliances of the water cure operate in a precisely similar manner, but much more energetically, and therefore more speedily. The appetite rendered keen by the *ensemble* of the plan pursued, and especially by the water drinking, leads to the digestion of good food, for the processes all tend to the reduction of irritation in the digestive organs; the life in the open air perfects the blood formed from the food; all the processes tend to draw that blood towards the exterior surface, and relieve the internal organs; the water drinking and exercise increase the chemico-vital changes of the blood which waste it; and, as the old morbid fluid dissipates, improved digestion is making a better, which is to bring about a healthier nutrition of the frame. It will be seen that the parallel is complete; and as the means of the water cure are only, as it were, an *exaggeration* and systematization of those to be found in the natural agents—food, air, and so forth—it may very properly be denominated the *hygienic* water-treatment. These positive means are only imitations and improvements of those employed in the purely *natural* restoration of the body; and they thus fulfil the highest aim of Art—the imitation of Nature. No plan of treatment which I have ever heard of so completely keeps this in view as the water cure; it aids the body by the very same agents that nature uses, and in such a manner as never to interfere with her tendencies towards restoration of health. When the body is thus only aided in its own efforts by its own appropriate agents, the best possible ground is afforded for trusting in the permanency of the cure which itself effects. No cure can be complete or permanent which is not the result of the body's own efforts, and which is wrought by artificial and forcing agents.

When, therefore, time is an important matter, and some trouble is not considered (for the water-treatment *does* imply pains-taking), there is much gain in having recourse to the water cure, rather than to the mere life of simplicity and retirement. It has been suggested, that a month of its employment after the exhaustion consequent on a period of dissipation or occupation, would be more than an equivalent for three or four months of travelling, and similar healthful stimulants; and there is no doubt that such is the fact. Besides, when a man travels, or is even fixed for a period in one place, he is left to his own devices, and exposed to temptations, the gratification of which wars against the renewal of health; whereas the water cure *fixes* him to certain wholesome rules and habits, that are necessary parts of the hygienic *régime* under which he is. It is too true that visiting the populous watering-places, such as Cheltenham, Bath, or Leamington, "for the benefit of health," is very often only a change from one scene of dissipation to another, and that the *change* alone enables the body to bear the *dissipation;* a capability which is mistaken for permanent restoration.

The *more grave* degrees of chronic disorder, however, no period of retirement, country life and air, or change, will suffice to remove. The organic powers by which the salutary efforts of the frame are made, are far too deteriorated to be roused to such efforts by the ordinary operation of those ordinary natural agents. Of this kind is the great majority of the cases which seek aid from the water-treatment. The lower the organic strength, the greater the amount of natural stimulus required to bring it into play; and the concentration of such stimulus exhibited in the various processes of the treatment in question, usually effects what the long-continued trial of quietude and air had failed to procure. There is another reason for this. Numbers of my patients, previously to visiting Malvern, had taken voyages, changed residence, and so forth, but had not ceased to take medicine, and had only changed from one kind to another. Nor *could* they, under those bare circumstances; the drugs were to their languid organs a means of artificial stimulus, for which the natural stimulants were not sufficiently strong to prove a substitute; and accordingly, they continued to increase the feebleness of the organs by the drugs on the one hand, whilst, on the other, they were in vain exposing themselves to the action of natural remedies, which, without the drugging, would not have sufficed to kindle or sustain the organic energies, but, in conjunction with drugging, were utterly neutralized; the disease being allowed to go from bad to worse. Yet these patients rarely fail to recover under the water cure, because they find in it both a sufficient amount of natural stimulus to rouse the organs, and a substitute for the artificial stimulus of drugs; the withdrawal of which, therefore, is not attended with the inconvenience it otherwise would be. This is a hard thing to be believed by those minds, lay or professional, which connect inseparably medication with drugging, and know of no remedies save those of the Pharmacopœia. It is not a whit the less true, notwithstanding; the water cure *does* possess positive appliances, by which the body is enabled to bear with impunity the withdrawal, immediate and complete, of all artificial stimulants, medicinal and dietetic; and not only so, but by which the self-restorative power of the organs is roused far more effectually and permanently than those stimulants could ever do. Whenever a patient undertakes the water cure, wine and all other alcoholic stimulants are withdrawn totally, and at once; yet I *never* saw the smallest inconvenience, still less danger, follow. He only exchanged a less for a more natural stimulus.

IV. The water cure, then, producing its effects by liberating the organs from causes of disease, and by aiding them, when thus liberated, in their attempted struggle for restoration, we have next to inquire what power of the organs it is which is set at liberty to make the attempt in question. Physiological research leaves no doubt on this point. All the causes of health, as well as disease, infringe, in the first instance, on the *irritability* of the body, as represented by the nutritive or ganglionic, or visceral system of nerves. (See Chapter I. of this volume). No organ, or part of an organ, can be diseased without diseased action on the part of its nutritive nerves. A certain amount of stimulation applied to them produces the phenomena of *healthy life* in any part; a further amount causes the phenomena of *excessive life* to be followed, as certainly as fatigue follows extreme labour, by the phenomena of *diminished* or *exhausted life.* The connection of this nervous system with the blood circulation has been stated at length in the early portions of this work; and it is only necessary here to recall that, wherever there is *exhaustion* of the nutritive nervous energy of an organ, there is *excess* of blood in the minute blood-vessels, that energy being insufficient to afford to the blood-vessels the power of passing on the blood they contain. In an inflamed eye, we behold vessels distended with blood: those vessels cannot pass it on, because their ganglionic nerves, after having been violently excited by a cold air, it may be, have gone to the other extreme of feebleness, so much so as to be unable to give the vessels contractile energy enough to throw the blood out of them. *Hence, excess of blood, and deficiency of nutritive nervous energy, constitute the essential of diseased action of a part.*

But when an organ is thus situated—that is, with too much blood, and too little nutritive energy—other organs come, in consequence, to be conversely situated. We have a striking instance of this in *dropsy of the belly;* the large surface of membrane (the peritoneum) in this state of vascular *relaxation, increased* blood, and *decreased* nutritive nervous power, causes vascular *contraction, decreased* quantity of blood, and *increased* nutritive nervous power in the kidneys (hence the decrease of urine); in the skin (hence the paleness and coldness of it); of the mucous membrane of the mouth and throat (hence the dryness and thirst); and of the mucous membrane of the colon (hence the constipation). Blood being *plus* in the dropsically inflamed part, is *minus* in other parts. And a similar arrangement obtains in all cases of chronic disorder; there is always some organ, or set of organs, whose excessive supply and retention of blood render them irritable in themselves, and a source of organic irritation to other organs. From a corn on the toe, to an ulcer in the stomach, organic irritation, represented by excess of blood and decrease of nutritive nervous energy, obtains.

Now it has been shown in the First Part of this volume, that all nutrition in all the organs of the body depends upon the ganglionic nervous matter distributed to the minute blood-vessels of each of them; and that, as nerves composed of that matter are everywhere, the *organic or nutritive sympathies* (for they mean the same) of parts are dependent on them. Further, it has been shown that these nerves have their great central portion in the viscera, and more especially in the viscera of the first digestion—the digestion of food. Hence it is that all organic irritations of any organs are referred to this great centre; and, according to the state in which *it* is, or the amount of the shock *they* give it, is the degree and duration of disease. If a man break his leg, the organic irritation thereby produced in the leg is referred to the visceral centre of all organic sensation; if that centre be sound, the leg will do well; if not, it will not, but a gangrenous or a chronic inflammation of the limb will be established. If a man catch cold in the head, and is all sound in his nutritive nervous centre at the digestive organs, the cold will soon disappear without spreading; but if he be not sound there, the lungs will be in a delicate state in consequence, and the cold of the head will extend to them and cause chronic cough. Similar proofs may be drawn from every sort of disease in any part of the body. And the fact is beyond a doubt that, according to the condition of the great organic nervous centre in the primary nutritive viscera, is the degree and duration of any diseased action elsewhere. So long as the stomach will digest food *well*, no chronic disease can come; nor will it kill, until the stomach can no longer make sufficient blood out of food for the waste of the frame.

It is upon the organic power enjoyed by every blood-vessel in the body, a power represented by the ganglionic nervous system, and having its centre in the viscera, that the water cure operates; and it is by it that the water cure produces its results. It is by the liberation of this power from oppression, and the restoration of its energy, that the water cure rouses in it those salutary efforts which constitute the *only* means of obtaining *permanent* cure.

V. The condition of the viscera on which chronic disease depends, is one of irritation or inflammation, oppression or congestion, and obstruction. In applying the water cure, it is necessary to ascertain which of these states obtains. It has been stated in the last paragraph (IV.) that when inflammation or congestion exists in a part, it is to the detriment of the circulation in some other parts. And so in the inflammatory or congestive state of the viscera under consideration, all parts of the body are deprived of the fit quantity of circulating blood, save the part chronically diseased (a rheumatic limb, for instance), and the viscera, which makes its disease chronic. In rheumatism, for instance, there is a gorged liver and stomach, and inflamed fibrous sheaths; but the circulation in the skin flags, the kidneys are scanty in action, so are the bowels, &c. In other words, there is a *mal-distribution* of blood, from deficient organic energy in the viscera to rid themselves of the excess they contain, for, if they can be made to do that, the chronic complaint ceases. This is the case, both when there is fulness, and when there is want of blood in the system generally; for, as has been already stated, when there is a general deficiency of blood, Nature always centres the little there is in the internal parts. The principal aim of the water-treatment in chronic disease is, therefore, to procure a *better distribution* of blood. If there be bloodlessness as well, *the formation of blood* is another chief aim, but always in connection with its improved distribution; otherwise the blood made will *augment* the congestion of the viscera.

VI. Having ascertained whether the phase of visceral fulness is that of irritation, inflammation, congestion, or obstruction, it is expedient to act upon some of the organs which have been deprived of their supply of blood, and whose nutrition has been curtailed by the excess in the viscera. In all chronic diseases, the *skin* is especially affected in its nutritive energy. As blood accumulates within, it diminishes outside; so that in very old chronic maladies, there is not a particle of blood to be found in the shrivelled, bloodless surface of the body. It is upon this surface that the processes of the water cure are especially directed. Endued in the healthy state with an enormous supply of blood and nutritive nervous energy, and, moreover, closely connected with the brain and spinal cord by innumerable nerves proceeding from them, the condition of the skin, as regards nutrition, is necessarily of vast importance to the rest of the economy. And this is more striking still, when it is considered as the surface which receives the impression of all atmospheric changes, forms a great excretory organ, and is the seat of a considerable portion of the process of waste always going on.

In chronic disease, all these important functions are diminished or deranged. Deprived of blood, but still deriving exquisite sensitiveness from the nerves it receives from the brain and spinal cord, it retains its susceptibility to all external circumstances without having blood enough, and therefore nutritive power enough, to re-act upon and resist them. For a like reason its action of excretion and waste is diminished. The organic sympathy which it has with the viscera within, by means of its ganglionic nerves, is disordered, and the equilibrium between it and the mucous membranes, which are the *internal skin*, lost; whilst by the net-work of animal nerves it takes from the spinal cord and brain, it sends up to those organs the impression of every atmospheric agent, and receives from them the impression of every mental process of perception, thought, and will. And be it remembered, that in chronic disease, the nutrition of the brain is always more or less deranged, and that the skin, therefore, receives impressions from a disordered source.

Thus, standing between the two great nervous centres, connected with the ganglionic centre by the nutritive nerves it possesses, and with the brain and spinal cord by the animal nerves with which it is so copiously supplied, it may readily be conceded, that the system of treatment which makes the skin the surface on which to produce its operations is, at least, no contracted one. Acting upon the skin, we can affect powerfully or feebly the nutrition of the primary nutritive viscera, and of the brain and spinal cord, &c., and through them, the nutrition of the entire organism. Being external and patent, we can ascertain the exact amount of the result of the remedies; and on this account, as well as because the skin is not a primary or secondary nutritive organ, and therefore does not immediately compromise existence, we know it to be the *safest* part for the application of means. Besides all which it is, in chronic disease, the organ whose blood circulation has been most seriously deteriorated by the visceral congestion, and which therefore most urgently presents itself as that by which to re-establish the equilibrium.

VII. The action of the water cure, then, is upon the ganglionic or nutritive nerves of the skin, connected with the great ganglionic centre of the viscera, and upon its animal nerves, connected with the brain and spinal cord (it being always kept in mind that the brain and cord are, as far as their nutrition is concerned, themselves masses of ganglionic nervous matter). As the viscera are invariably diseased in chronic disorder, and as the brain and spinal cord are the organs in which they the soonest excite morbid sympathies, this action upon the skin is adapted to produce results upon both these two great centres of chronic disease at once, *and this without direct application to either;* an important consideration. For it is by virtue of this that the water cure is an artistical treatment which aids, but does not interfere with, the natural efforts of the body towards health. By the adaptation of the means to the organic capabilities of the viscera and skin, I am enabled to produce a certain amount of re-action in the blood circulation of the skin. For instance, I apply a dripping sheet to the skin of a patient, after ascertaining the condition of his viscera; by doing so, I excite the nutritive nerves of the skin, and, by that, cause contraction of the blood-vessels of the surface; contracting, they drive the little blood they may contain out of them upon the viscera. If I have calculated well the patient's condition, this sudden invasion of fresh blood will rouse the viscera to efforts to get rid of it, and those efforts will be directed towards the surface whose vessels are most ready to receive the blood—and this will be the skin, since, after their vehement contraction by the water applications, its vessels will have fallen into exhaustion, relaxation, and consequent capability of receiving blood. This process, repeated day after day, and two or three times a day, and aided by the impressions made by other processes to be mentioned, at length re-establishes the blood circulation of the skin; and this re-establishment of blood in the outer surface of the body, insures the diminution of blood in the inner surface of the body, the visceral mucous membranes, and their nerves. But I have shown that all chronic disease consists in irritation, inflammation, or congestion of the primary nutritive viscera: in other words, in excess of blood in them. Therefore, *diminution* of blood in them is cure of such disease—and *permanent* cure, because they have effected it by their own efforts. All that I have done is to apply a stimulus to a skin which was *below* par in vitality, in order to rouse, sympathetically, an inner part which was *above* par in vitality, and would be better for sending some of its excessive blood to the skin, which wanted it.

All this supposes adaptation of the means to the organic capacity of the patient; this cannot be too much insisted upon. It would all have been reversed had I, instead of the dripping sheet alluded to, ordered a cold shallow bath. The stimulus of this would have driven a larger quantity of blood from without inwards than the viscera would have organic power to resist and throw back again; it would therefore have remained in the viscera, *increased* their blood, *decreased* that of the skin, and thus have inveterated the chronic disorder. This shows strikingly the necessity for professional nicety in the numerous cases where the *vis vitæ* is materially impaired by the long-continued mal-distribution of blood. It also shows the absurdity of treating all cases alike, or nearly so, as is too often the fact with the *ci-devant* bath servants and pseudo-doctors who pretend to practise the water cure.

So much for the *direct* nutritive sympathy between the ganglionic nerves of the skin and those of the viscera, which is brought into active and healthful play by the water-appliances to the skin.

But these appliances also convey impressions from the skin to the viscera *indirectly*, through the medium of the brain and spinal cord, whose nerves are distributed in the texture of the skin. It is needless to repeat the rationale of this, the strict sympathy between the brain and viscera being sufficiently understood to account for it. Still, it plays an important part in the action of the water cure, and especially of those parts of it which are tonic and stimulating, and have the result of removing obstinate congestions and obstructions. The prolonged shallow bath, the douche, and the sweating process, act very much by the stimulus they excite in the cerebro-spinal system, and the communication of that stimulus to the viscera. In a minor way, rubbing sheets and foot baths effect the same, removing such temporary congestions as are indicated by nervous headache, occasional giddiness, &c. It is clear that such a power of acting on the brain should be used with discretion, and only after accurate investigation of its condition; and I have spoken on this point in the section on "Apoplectic Fulness of the Head." How this is to be done without professional knowledge, I leave those to determine who trust themselves to the guidance of the self-constituted practitioners alluded to in the last paragraph. It is the more necessary to be precise on this matter, as it is, in great measure, by the instrumentality of the cerebro-spinal system that the great changes effected by the water cure are produced. So much is this the case, that in many instances we are obliged to suspend or relax the treatment, in order to afford rest, for a time, to the nerves, which give signals of distress in fidgetiness, broken sleep, impatience, and irritability, &c. Immediately previous to any critical action, also, symptoms of this kind evidence the unusual excitation and labour of the cerebro-spinal centre of nerves. Excitation, indeed, of that centre communicates to the visceral ganglionic nerves some of that power by which they are enabled to throw off their chronic disorder; and it will therefore be at the highest when that disorder is nearest to its end. When in this state—that is, approaching a crisis—patients generally contract great horror of all the baths and processes which had previously pleased them; and this plainly, because the applications to the skin add to the excitement which they already experience, and which is due to the state of the brain; there is a genuine *instinct* in the horror they feel. If the treatment be scientifically and carefully conducted, according to the organic state of each patient, the whole of this action on the brain and spinal cord is perfectly easy and perfectly safe; but if all persons be treated alike, that is ignorance and quackery, and the water cure is not accountable for its consequences.

Excitation, however, is not the only state of the cerebro-spinal centre which the water-treatment induces. Some of its processes, such as hot fomentations to the stomach, the wet-sheet packing, and the prolonged sitz bath, have a decidedly *soothing* effect on it, a sense of quietude, and even sleep, attending their employment. These, accordingly, are the processes that apply to active irritations and inflammations rather than congestions and obstructions, in which last they often do harm. They soothe the extremities of the animal nerves that are distributed to the skin, and *pro tanto*, removing irritation from their centre, the brain, this latter sends less excitation to the viscera, and thus the whole frame is quieted. Part of this quieting of the viscera must, however, be attributed to the operation of the soothing processes on the ganglionic nerves of the skin, *directly* communicated to the viscera, and without the intervention of the brain; for visceral irritations are often removed by them, without, at least, any appreciable alteration in the function of the brain in the direction of quietude. Yet this only applies to such visceral irritations as have not materially involved the brain in their disorder; if that organ plays a prominent part in the morbid phenomena, the soothing processes are certain to act upon it, and, through it, upon the viscera. Of the rationale of these processes, I shall have occasion to speak hereafter.

VIII. Acting, therefore, upon the ganglionic nervous power of the *exterior* of the body by the production of excitement or soothing, as the occasion may require, the water cure effects a change in the visceral or *internal centre* of that power. It has been abundantly shown, in the course of this work, that the existence of chronic disease in any part is attributable to chronic excess of blood in that visceral centre, an excess accompanied by irritation or oppression of the ganglionic function there. By operating, as has been said, upon the skin, the irritation in question is soothed, or the oppression relieved; in other words, *by the diversion made upon the skin*, *the excess of blood in the viscera is diminished*, *whilst the quantity of blood in the skin is increased.* And let it always be kept in mind, that this operation on the skin means operation on the nutritive nerves of the skin, and that this diminution of blood in the viscera is the result of an action, which this operation on the skin has enabled the centre of the nutritive nervous system to commence, and which a continued operation on the skin enables it to maintain, that action being what is called "*a natural effort towards self-restoration.*"

In the manner in which this operation on the skin is commenced, in the tact with which it is maintained, relaxed, or pushed according to each patient's position and power, consists the scientific application of the water cure. It is easy enough to instruct a patient to go on with the same processes for a week or two, and never see him meanwhile; but such proceeding betrays ignorance as well as indolence on the part of the practitioner. The disagreeables which *always* attend the attempts of the viscera to right themselves, may be materially diminished by accurate and frequent observation of the progress of the treatment; and even although the event of cure might be the same without it, the physician's duty is plainly to make it. I am aware that, in some water-cure establishments, continental ones especially, the contrary to this is inculcated and practised; that the patients are stimulated, knocked about, and kept in an incessant state of excitement and constitutional turmoil, and in the end are cured; but this is what any one can do; this is pure hap-hazard; and, lastly, *this is not safe.* Neither is it a whit more successful than the more considerate and considered plan which is constantly adapting the applications to the state of the body, so as to avoid all unnecessary tumult and suffering. This *may* be done, it *ought* to be done, because it is *safer* and *more efficient.* I have already alluded to the manner in which the application of even a shallow bath, instead of a rubbing sheet, may *increase* the chronic visceral congestion; imagine this blunder continued through weeks or months, and with still more powerful processes than either of these! No; the object of the positive means of the water cure is to *aid*, not to *force*, the visceral energies; to withdraw causes of disease from them, to produce a diversion in their favour, and to assist them, *in the exact proportion in which they require it*, when that diversion is made.

To return. The aim of the natural effort thus excited is to rid the noble parts of the body of excess of blood. The relaxed and enfeebled blood-vessels of those parts obtain, from the renewed activity and power of their ganglionic nerves, the power of contracting, of driving their oppressive weight from them. By this the *equilibrium of the circulation* comes to be gradually established, and with it the *equilibrium of organic sensation.* Hence the fact experienced by so many water-patients, "that they never had warm feet until they used *cold* water;" that water gave energy to the visceral blood-vessels to *throw* blood towards the feet, and it *remained* there, because it was sent thither by the power of the frame; whereas the *hot* water formerly employed added its own artificial heat to, and *drew* blood towards the feet, that heat and blood *receding*, when the water was withdrawn, and leaving the feet colder than ever. And this applies to the circulation on the entire surface of the body. Still repeating the tonic and soothing applications to the skin, the inner organs gain day by day, by *sure* and *lasting* progress, the power of sending their excess towards the skin, whither it is invited by the processes going on there. This may proceed until sweats, exudations of different kinds, eruptions, boils, &c., announce that excessive circulation of blood goes on in the outer, instead of, as it previously had done, in the inner skin or mucous membranes; so completely are things reversed, and the vital parts saved by the water-treatment.

But the blood-vessels of the inner parts are relieved by another action of their own. So soon as, by the contracting action just spoken of, they are rid of a certain quantity of blood, they regain their secretory power, which had seriously been impeded or suppressed by the loss of ganglionic nervous energy, and by the morbid accumulation of blood in them. Now that they have regained some of their energy, and diminished some of their contents, they further diminish the latter by pouring out their usual fluids, which are generally at first diseased in kind, but gradually improve. In this manner it is that the dry tongue becomes moist, together with the mucous membrane of the stomach, which begins by pouring out acid and mawkish secretion, but ends by secreting healthy mucus; and the liver, too, from being torpid, yields diseased and then sound bile. This secretory action sometimes occurs to such an extent as to excite the stomach to vomiting, and, after several days of preliminary qualms, which announce the state of organic effort, quantities of mucus and bile are rejected, forming in certain complaints a *bilious crisis.* This renewal of functional activity both releases the blood from some of its parts, and decreases the quantity of it in the organs in question, and quickens its passage through vessels in which it had hitherto stagnated.

The retention of excessive blood in the upper organs of digestion, and in the brain and spinal cord, has been shown to be the efficient cause of constipation. As the irritation of the digestive organs induces that of the brain and spinal cord, so, when the former lessens, the latter diminishes also. Thus two morbid causes being removed, the lower bowel begins to act, and by it the blood is relieved of certain parts which had hitherto been retained in its current from the inactivity of the colon. In this manner further relief is brought to the mass of blood in general, and the other digestive organs in particular. Sometimes the surface of the colon, which, like the skin, had been long inactive in consequence of irritation elsewhere, is not only released and rendered active by the cessation of such irritations, but, like the skin in that respect also, is made the part on which the excessive blood of the irritated organs is thrown for relief. In such instances purging takes place, and is occasionally critical of the disorder of the stomach, liver, &c.

IX. The removal of irritation and congestion from the primary digestive organs necessarily allows of better digestion of food, and therefore leads to the formation of better blood. This is an important consideration in chronic disease, where the mal-distribution of that fluid has time to deteriorate the whole mass of it by a long course of bad digestion. From such poor and morbid blood, morbid solids are deposited; and as these regulate the distribution of that, the mal-distribution inveterates. It is clearly necessary to form new and better blood, and to remove the old and morbid mass. We have seen by what means of the water cure the new blood is formed; we shall presently see how the old blood is removed.

When blood is *deficient* in the body, the same rationale of its formation applies. There is still the same congestion and bad distribution to remedy, and, that done, the digestive organs recommence their blood-making functions. It is to be remarked that *deficient* blood implies a much more advanced and complicated character of chronic disorder than mere mal-distribution in a frame well supplied with blood. Hence the water cure requires to be more carefully applied, and for a longer period, in the case of bloodlessness, than of simple visceral congestion; you have not only to *distribute*, but to *make* the blood as well. One striking and excellent feature of the water cure is, that the same appliances which *indirectly* aid in the formation of improved blood, *directly* aid in its improved distribution; these appliances being the negative and positive means hitherto under consideration.

X. Chronic internal congestion tends to bad digestion and blood-making; no disease can go on without sooner or later, according to its degree of intensity, vitiating the circulating fluid. And this is aided very much by the absorption of medicinal substances in the ordinary mode of practice with them. On this point there can be no doubt; again and again I have detected the odour and colour of colocynth, of aloes, of gamboge; in one instance of camphor, even in the cutaneous exudations upon compresses. Whether their presence in the circulating blood has a deleterious effect on nutrition, may be a question, since proof, when there is digestive disease to account for the bad nutrition we see, is hard to get at; all physiological probability, however, favours the belief of its mischievous operation. Be this as it may, diseased blood attends old-standing internal disorder; and as the means of the water cure already reviewed tend to remove that disorder, we have next to ask what means are applicable for changing the mass of unfit blood which follows it.

They are to be found in the *water drinking, the exposure to pure air, and the exercise*, which form so important a part of this hygienic treatment.

In treating of water-drinking as a means of changing the mass of circulating blood, it is impossible to avoid reference to the chemical doctrines of LIEBIG on this subject. But I shall be brief in exposing the mode in which they apply to this process. Three years ago I wrote a work,* which contains the rationale of such application, and the chief portions of which I republish as the Appendix to this volume, where it may be read at greater length. At present it is only necessary to state that LIEBIG's experiments go to show, that all the elements of the blood are in the food we digest; that all the elements of the solids and fluids of the body are in the blood; that the antagonist processes of deposit or solidification of the blood, and of breaking down or reliquefaction of the solids, are incessantly going on; that waste of the whole material of the body is also incessantly going on; that these acts of change and waste (waste being, according to him, an actual process of combustion) constitute the leading phenomena of the living body. Further, he shows that the supply of material for this waste is in the digested aliment converted into blood; and that the rapidity of waste, as well as of the changes alluded to, is varied by different circumstances. And the circumstances which quicken the waste and changes most strikingly, are a *copious supply of water to the blood, exposure to cold air*, and *exertion of the nervous power in bodily exercise.*

According to this view, so long as the digested food supplies the material for waste, and a *proportionate* amount of water, air, and exercise is taken, the stationary condition of *health*, or of equal supply and waste, obtains. When the food taken and digested *exceeds* the waste, in consequence of avoiding water, air, and exercise, *diseases of repletion*, inflammatory diseases, take place. When, on the contrary, *excessive* dilution, long exposure to cold, and exertion of body hasten the waste, supply in the shape of food not being in proportion, *diseases of depletion* and emaciation take place. Persons, says LIEBIG, die of chronic diseases, because their material is wasted without proportionate supply. In other words, chronic disease kills from failure of the central and primary nutritive power situated in the digestive organs, as I have stated in the First Part of this work.

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* "The Dangers of the Water Cure Examined," &c., 8vo. 1843. Simultaneously with this work appeared Dr. E. JOHNSON's "Hydropathy," wherein the same application of LIEBIG's doctrines is made, but more fully, and certainly more cleverly, than in my production.

Granting these chemical doctrines of LIEBIG to be sound (and only a few minor objections have been urged against them), we have at once the key to the mode in which water drinking, abundant air, and exercise, produce a change in the circulating blood. They produce it by expediting the chemical changes and waste. And whilst the positive and negative means which have been above dilated on are relieving the central organs of nutrition from oppression, and thus causing a better digestion and supplying better blood, the water drinking, air, and exercise are quickening the operations by which the old diseased blood is to be wasted and got rid of.

I insist upon the division of these two effects of the water-treatment. The effect of *better distribution of blood* is brought about by the processes mentioned in the first eight divisions of this chapter, by the external applications of the water cure. The effect of *change of the mass of blood* is wrought by the internal application of water, the exposure to air, and the exertion of the frame. These are distinct acts, though they go on simultaneously in a body, whose chronic disease requires that both should be excited.

And here, in my belief, founded on large experience, is a question of great importance in the practice of the water cure :—*Do* all chronic diseases require that both a *better distribution* and a *total change of the blood* should be effected? The same experience compels me to answer, "Unquestionably not; there are diseases in which the *only* proximate cause is a mal-distribution, and in which the mass of the blood is not diseased." Let us examine into this a little; it involves the question whether large doses of water and great exercise in the air are essential to the cure of all chronic diseases? Physiological reason aids experience in proving the negative.

When it is said that such and such chemical changes are effected by water drinking, let it be always remembered, that we know of no increase in the functions of a living body without increase in the functional activity of its *nervous system.* All agents whatever produce their first impression on that system; all the chemical changes implied in secretion, nutrition, &c., are preceded by a change in the vitality of that system. The water cure has been treated of as a mere affair of chemical transpositions, but that is a very unphilosophical view to take of it, those transpositions being secondary to, and the *result* of certain conditions of the nerves. Now, the presence of a large additional quantity of water in the circulating mass, proves a stimulus to the organic nerves which so plentifully supply the minute blood-vessels. In these blood-vessels the chemical changes in question take place, and they are stimulated to augmented activity of change by the water. This activity continually increases, so long as large doses of water are continued, and with it the activity of the nervous system, which at length becomes involved in its whole extent, the animal as well as the ganglionic system, the brain as well as the viscera. This is amply exemplified in the increased rapidity of pulse, of appetite, of secretion and exertion, of sensitiveness, amounting to nervousness, sleeplessness, and irascibility, which attend large water drinking. And it is quite true that the heart may be stimulated to excessive and morbid action, and the brain to maniacal and apoplectic fulness, by the excessive taking of water. The enemies of the water cure say that it *always* produces these results; but it is only the *abuse* of *water drinking* that renders the body liable to them; neither, so far as I read and hear the accusation, do the accusers appear to understand *how* even its *abuse* is to cause the mischiefs they predict. The explanation is that which I have given; and an illustration of the danger of large and sudden dilution will be found in Case XXI.

Well; suppose a patient with general fulness of body and apoplectic tendency in the head were to be told to "drink as much as he pleases—the more the better" (a not infrequent instruction with routine water doctors) the chances are very much in favour of the tendency ending in a seizure. Or suppose the other extreme of emaciation and bloodlessness, that state in which all the blood of the body is centred in the citadels of life, the viscera and brain; the certain result of large water-drinking there would be to increase the unequal congestion of those parts, probably to induce paralytic pressure in the head. In both cases, the nervous system would be greatly increased in activity; in the former, the already too full brain would be further and rapidly filled, until *sudden* pressure occurred; in the latter, the same pressure, only more *gradual*, would occur, the absolute quantity of blood in the body being smaller. Or suppose a case in which the pulse is rapid, the stomach highly sensitive, the brain excitable—a case of ordinary nervousness, in short—the consequence of large water-drinking there would be to increase the nervousness tenfold. And several analogous cases might be instanced, where the malady being one of *active irritation* and *mal-distribution* alone, the vigorous application of this part of the water cure is sure to prove more harmful than useful. Where the malady is one of *obstruction* and *diseased blood* alone, or conjoined with mal-distribution, water-drinking may usually be carried to a considerable extent with benefit; and it commonly happens that cases of obstruction are those of diseased blood also, the former causing retention of chemical elements which vitiate the blood. I shall return to this subject in the succeeding chapter.

Abundant exposure to air, and *great exercise*, aid in changing the quality of the blood, by expediting the waste alluded to; for this waste is effected by the action of oxygen upon the combustible materials, the carbon and hydrogen of the body. This takes place still more rapidly when exercise of the limbs, and, therefore, of the brain and spinal cord which *will* the movement of them, is added to exposure to air; and the colder the air, the more rapid the waste. A man skating on a frosty day consumes more oxygen, and, therefore, is himself more consumed, than if he were *seated* in a temperate room, or even in a frosty air. And a person driving in a carriage consumes less than one walking, besides having much less strain upon his nervous system. Thus the question of mal-distribution or disordered blood should be raised, when the quantity of air and exercise is to be determined. Neither in this nor in water-drinking is an unchanged order for all cases admissible.

XI. The ultimate action, therefore, of the appliances of the water cure in chronic disease is *to induce a better distribution of blood, by withdrawing the excess of it from the nutritive viscera; to cause the formation of sound, nutritious blood; and to rid the body of the diseased blood which circulated in it.*

These phenomena take place in the order in which they are mentioned. First of all, the viscera are liberated from the blood which oppresses them. As a consequence of this, these viscera proceed to make better blood, the means which aid its healthy distribution still going on. And lastly, as the viscera gain more organic power by being liberated from their oppression, and the whole body gains more organic power by being nourished with better blood, waste is more quickly and safely carried on, so as to insure the expulsion of diseased fluids from the body. But though such are the physiological processes, it must not be supposed that each one waits until the preceding one is *fully* accomplished. So soon as internal congestion *begins* to diminish, better blood-making and nutrition begin also; and, with these, the elimination of diseased blood. The triple process depends for its vigour upon the restoration of the organic, ganglionic, visceral power—the power to which, as a curative, and the only *truly* curative agent, the generic name of Nature is applied. The water cure, aiding in the liberation of this power of nature from oppression, subsequently aids it in the efforts which it makes, to restore utterly and permanently the equilibrium and the integrity of the nutritive liquid, the blood. With this equilibrium and integrity comes health—*permanent* health, if morbid causes be avoided.

In the course of the efforts which Nature makes, with the co-operation of the water cure, it sometimes happens that the new distribution of blood which they bring about is so energetically effected as to cause morbid congestions of blood in other organs than the diseased viscera. In this manner congestion of the lower bowel takes place, and is exhibited in *diarrhœa;* general congestion of the skin takes place, and is exhibited in *sweats* of nervous kinds; or partial but more intense congestions of the skin take place, and are exhibited in *eruptions* of various kinds, and in *boils* of various degrees. To these exhibitions of transferred irritation and circulation the name of *crisis* is given. Because in the matters eliminated from the bowels in purging, and from the skin in sweats, moist eruptions, and suppurating boils, there is more or less of a morbid character, it has been said that it is by them that the diseased condition of the blood is rectified; that, in fact, they carry off the diseased matter of it. But this will not stand: the disorder of the blood consists in the absence of elements which should render it fit properly to nourish the tissues, and not in the presence of the mucus, sweat, or pus, as such, which are thrown off respectively by the bowels and skin; that conjecture is one of the most coarse and gratuitous of the exploded humoral pathology, but has been renewed by several unlettered and illegitimate practitioners of the water cure. It is true that the cutaneous secretions have on some occasions shown the presence of medicinal substances in the circulating blood; but it is not probable that the mere presence of medicines constitutes the disease of the blood; and critical action much more frequently happens without than with their elimination. Indeed, crises of all kinds occur without evidence of any sort of disorder save a mal-distribution of blood; just as frequently, in fact, as when there is the addition of disordered blood.

Critical action, then, as the result of the water-treatment, signifies that the viscera have been enabled to throw their irritation and blood upon some other organs—the lower bowels or skin; and that this excess of blood and this irritative action attempt relief by throwing out large fæcal secretion, or unusual cutaneous secretion. That is all that can be said of a crisis: it is an outward and visible sign of the exercise of a power on the part of the inward organs, to save themselves by a transfer of mischief to parts less essential to life. To push this by continued treatment under the idea of extracting more "bad stuff" is sad stuff, and may be harmful; we should be content with the evidence the crisis gives of efficient rousing of the self-restorative power, and diminish, or even altogether cease the treatment, for a period at least.

The occurrence of a crisis, however, is neither frequent, nor is it necessary in many cases. The gradual progression of improved distribution of blood, of improved formation of blood, and of waste of diseased blood, effected by a judicious application of the water cure and a regulation of diet, tends towards a recovery which is quite as effectual and permanent as that of which a crisis is a signal. Of this I have satisfied myself in many instances; and any one who observes the treatment, and employs thought upon it, will see how unnecessary were all the wonderful crises which were, at an early date of the water cure in this country, imported from the Continent to astonish the English public. Such crises may have taken place, but I am certain very often very unnecessarily. Violent treatment, no doubt, will excite them much more frequently than mild treatment; but I maintain that this last suffices for all purposes of cure, and causes much less inconvenience and mischief. In the one case, you cautiously and gradually work upon the nutritive nervous system, keeping it up to the point of slow, continued effort at self-restoration; in the other, you force it suddenly to a violent effort, and in doing so produce vehement revulsive and tumultuous action in the great nervous centres. I do not believe there is an atom of danger in the latter, in the care of an educated physician; but it has not, so far as my experience goes, advantages enough over the slower plan to render it a great aim.

The facility of exciting critical action varies very much in individuals: nor is it easy to say beforehand who shall fall under it the most readily. As a general statement, it may be said that persons of moderate stoutness of body, with a circulation rather slow than otherwise, incline to the critical action of the skin which is exhibited in boils. These are also more frequent when the patient has been a great physic-taker, especially a taker of vegetable purgatives; or if he has been an excessive drinker of alcoholic liquors. On the other hand, when the patient is lean, *wiry*, of vivid nervous system and circulation, internal crises of purging or vomiting, or external crises of diffused eruption, or of sweat, are more generally met with; or when the malady is one of mal-distribution only, and especially of the class called nervous; in these, an itchy eruption, or a feverish attack ending in sweat, are the usual critical signs. But all these points are of comparatively small consequence; the patient may very commonly be cured without any crisis, properly so called: and the practitioner who insists upon it, may gratify the marvellousness, but will very disagreeably disturb the economy of his patient by his pedantry or his quackery. But although the phenomena of a crisis, as above mentioned, are not necessary in very many cases, a change in the nervous and circulating functions must be wrought by the treatment—a change equivalent in degree to that of which sweats, eruptions, &c., are evidences, but procured and exhibited in a more quiet and less vehement manner.

XII. The preceding numerical heads of the subject of the action of the water cure in chronic disease, include the rationale of that action, so far as the *vital* agency of the body is concerned. I have only briefly alluded to the *chemical* changes effected in the body by the drinking of water: they will be found more in detail in the Appendix. But it should always be remembered that, however curious and potent a part these changes may play in the action of the water cure, they are *secondary* to the changes of the *vital* condition; nor can they be commenced or continued without that condition being previously altered. A physician may be well acquainted with the chemical phenomena announced by LIEBIG, and with their application to the explanation of the results of the water-treatment; but unless he is able well to measure the vital organic capabilities of his patient, his blood-making and nervous power, the chemical applications will rather lead him astray than assist him in the treatment of disease; he will only be able to see a series of chemical changes, and will take what LIEBIG says is the shortest way to effect them, without considering whether the *living body*, not the *chemical laboratory*, is able to bear the means for rapidly producing the changes in question. Remarks of this kind are necessary, because the doctrines of LIEBIG have been insisted and expatiated upon by writers, until readers behold nothing in the water cure but a series of chemical changes which they can themselves induce by their own devices. I have known this chemical crotchet lead a patient to treat himself with enormous doses of water, for the purpose of expediting the processes of the laboratory which he conceived his body to be, and thereby put his brain into the most imminent peril, apoplexy having as nearly as possible occurred from the violent stimulation of the nervous system thus excited.

In order to make more clear the views which observation has led me to adopt concerning the mode of action of the water cure, and which I have advanced in this chapter, I will recapitulate the subject of each of the foregoing numerical heads, which are all connected by a chain of experience and reasoning.

I. The power of Nature is advanced as the only truly curative power.

II. The water cure is shown to be that form of medical art which is the best adapted to aid Nature in her curative efforts, and the least liable to interfere with and thwart them.

III. The first step towards aiding that power of Nature is to withdraw from the organs all mental and bodily irritations. This constitutes the *negative* means of the water cure.

IV. We here inquire the seat and centre of that power of Nature which is liberated from oppression, and excited to action by the withdrawal of mental and bodily irritants. And we find it to be in the ganglionic system of nerves dispersed throughout the body, but having its central portion in the viscera, which are thus the sympathizing centre for all diseased actions in the body.

V. Hence it becomes essential, in applying the water cure in chronic disease, to inquire minutely into the organic condition of the viscera. And we find that to be a condition of excessive blood, in the shape of chronic irritation, inflammation, congestion, and obstruction.

VI. It, therefore, is of consequence to avoid means which tend further to increase the quantity of blood in the viscera, and to employ those which tend to bring it from the viscera towards those organs which, in consequence of the excess of blood in the viscera, have been deprived of a sufficiency of it. This is especially the fact as regards the skin, the vitality of which is the most seriously compromised by the internal congestion. To the skin, therefore, the second series of means are applied: these are the *positive* means of the water cure.

VII. Treats of the organic power of the skin—its connection, by ganglionic influence, with other parts—and how it acts *directly* upon the viscera, and *indirectly* on them, through the brain.

VIII. The viscera, liberated from oppression by the *negative* means, and aided by the *positive* means of the water cure, acquire sufficient power to rid themselves of their excess of blood by sending it towards the skin, and by outpouring of secretions from the stomach, liver, lower bowels, &c.

IX. The removal of internal irritation, congestion, &c., by these means, enables the nutritive viscera to form better blood and better solids; and, by means of these solids, to effect and maintain a better distribution of the blood of the body.

X. Whilst the blood is thus being better distributed, and formed of a better kind, the elimination of the old morbid blood is being effected by another means of the water cure, namely, water drinking. This it does by expediting those chemical changes of the body which are known to take place under the influence of the vital, organic power of the body, and which in a certain time change the whole of its fluids and solids. Air and exercise, other positive means of the water cure, assist in these chemical changes. These means, therefore, should be applied according as the disease to be treated implies mal-distribution of blood alone, or that with the addition of diseased blood. It is in this latter case that they are more particularly and largely demanded.

XI. Making its first impressions, therefore, on the nutritive or ganglionic system of nerves, the water-treatment, in its ultimate action, has a triple result,—to cause a better distribution of blood, to induce the formation of better blood, and to purify the blood. These stand in cause and effect as they are mentioned, the better distribution leading to better blood-making, and this giving the body power to sustain the increased waste which is requisite to purify the whole mass of blood. A visible evidence of these results is sometimes exhibited in the form of a *crisis*; but this is not essential; and the treatment which tends to cause it is, for the most part, better postponed for one less vehement in character, although equally efficacious in result.

Regulated by these views of the action of the water cure, I have found it a safe and successful mode of treatment in a number of chronic disorders, the major part of which are mentioned in this volume. I fear that my views, and the practice founded on them, will be considered heterodox by those who are of opinion that water cures everything, and can possibly do no harm; who, therefore prescribe pretty nearly the same routine of violent processes and huge water drinking to every patient, whatever his malady or his organic condition; who, in short, are "*water* doctors," and nothing more.* But this is not to be controlled; facts have stared me in the face for seven years, which demonstrate the possibility of avoiding a great number of disagreeables by a scientific adaptation of the appliances of the water cure to the organic capabilities of each patient, and of arriving at a successful termination quite as surely as if the patient had been all day in water, and water all day in him. Besides, it is folly to suppose that improvement is never to be made in this mode of treating disease; that as PRIESSNITZ originated it, so it is to remain through all time. PRIESSNITZ is far too clear in mental vision, and original in thought, himself to stick fast in one routine; for in the course of his long experience he has considerably varied his practice; and it is satisfactory to know that now, after more than twenty years' experience, his treatment has lost almost all the violence which characterized it in former years, and that he, too, finds he can do as much with much milder means. I doubt not that, in due time, he will discover that such means are still more efficient when diet is regulated, and that the abominations of his table, to which all who have seen it bear witness, will be reformed. With keenness to observe, he has the tact to adapt his practice to the facts which observation imposes on him. Not so the small persons who run over to Gräefenberg for a few weeks, and return to practice the same processes on delicate Englishwomen and Englishmen with sensitive and careworn brains, which they had there seen practised on phlegmatic Germans, and hard-headed Poles (the great majority of whom, by the way, are not cured, or even relieved), and who, though they fancy themselves PRIESSNITZ, and come back "doctors," are in reality as much one as the other. From such I am compelled to differ in my ideas of the best manner of applying the water cure; and I am also compelled to hold, that its employment requires as much nicety and discrimination as any other plan of treatment, and may not safely be trusted to a routine. Knowledge of sound physiology and pathology are never more required than in the practice of the water cure; and in no system of treatment will the great truths of those sciences find more ample and beautiful confirmation.

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* I have heard a saying, "that water cures the mischief that water does,—go on drinking," attributed to PRIESSNITZ, but am unwilling to believe that so acute a man could have uttered such nonsense.

CHAPTER II.

DETAILS OF THE WATER CURE AND EXPLANATION OF THEIR ACTION.

Division of the processes—Hot and warm fomentations—Packing in damp towels and sheets—Sitz baths—Abdominal and local compresses—Dripping or rubbing sheets—Shallow bath—Spinal washing—The douche—The sweating process—Foot and hand baths—Other ablutions and frictions—Water drinking—Diet, air, and exercise.

The processes of the water-treatment have been multiplied by charlatanism as well as by ingenuity and judgment. Water has been squirted in all imaginable ways, and has been made to flow from all directions in all kinds of streams, upon the human body; and complexity has been largely employed to lure such persons as simplicity might fail to attract. This is all very well for those who see nothing in the water cure but an "establishment in full operation," and rely more upon the possession of "every variety of bath," than of the requisite knowledge to apply water. Patients may be for a time amused, or their confidence and hope re-excited by such contrivances as "ascending douche baths," "wave baths," "ascending sitz baths," &c.; but although I have seen very many at Malvern who have gone through all these ingenuities elsewhere, they had never had their diseases explained to them, and were pretty nearly as far from a cure as ever. And so it will ever be when the lucrativeness of the water cure is more considered than its philosophy, and so long as professional men, by holding back from investigation of the subject, allow so excellent a plan of treatment to be usurped by non-professional adventurers and *soi-disant* "doctors."

Putting these contrivances aside, I shall confine myself, in this chapter, to the explanation of those processes which are essential to the water-treatment of chronic disease, and the varied modifications of the application of which, suffice to meet all cases that are proper to be submitted to that treatment. Any precise division of them it may be difficult to make; but as in chronic disease we have recognized one condition, which is that of *active irritation* of the viscera, and requires to be *subdued* and *lowered*, and another condition, which is that of *depression* and *obstruction*, and requires to be *roused*, *stimulated*, and to have *tone* imparted; so these processes of the water cure may be divided into such as are adapted for *subduing irritative and inflammatory action*, and such as have the power of *giving tone to, of stimulating, and rousing* organs whose function is at a low ebb, or obstructed and torpid. Modifications, however, of one or two processes may be so made as to make them either *sedative* or *tonic*, as the sitz bath, a long duration of which is lowering and sedative, whilst a short duration is tonic and stimulating. But these instances are not numerous enough to warrant subdivisions; and I therefore proceed to treat, in the first place, of those applications whose general effect is to subdue irritation.

§ 1. HOT AND WARM FOMENTATIONS.

This invaluable mode of applying water was first put forward in this country by myself in the Lectures by Broussais, which I published in the year 1835. Among the French, it has long been esteemed and practised. I know no more powerful agent for subduing a certain phase of visceral irritation, and I employ it very frequently. Although a simple remedy, it is very little known or practised in this country; and I shall, therefore, state the mode of its application, which I shall not do with the other water-cure appliances, they having been described again and again, until the public who read works on the water-treatment must be wearied of it. No English work on the water cure speaks of fomentations such as those now under consideration.

A piece of flannel, thrice folded, is placed in a dry basin, and very hot or warm water is poured on it sufficiently to soak it. The flannel is then put into the corner of a towel, which is twisted round it, and wrung until the flannel is only *damp*. It is taken out of the towel, and immediately placed over the part to be fomented, and upon it is placed a double fold of thick flannel, dry, or part of a light blanket. The patient then, if it be the abdomen which is fomented, draws the ordinary bedclothes over him, and remains quiet from five to eight minutes, when another flannel, freshly wrung out, is applied, the former one being withdrawn. And this goes on for the whole time prescribed for the fomentation.

The most ordinary place for applying this process is on the belly, and especially the portion of it between the bottom of the breastbone and the navel, and across far back on both sides; this may be called *general* fomentation, its effect being on the phenomena of the whole body, in contradistinction to *local* fomentations of joints, &c. In this manner you include—the *colon* as it crosses the upper part of the abdomen, *the stomach* in all its length, the *liver* to the right, the *spleen* to the left, and a portion of the *small guts* situated above the navel; and, if the fomentation extend all over the abdomen, the remainder of the small guts, the *head of the colon* (where the fæces are formed), the *bladder*, and the *womb*. And lastly, though most important of all, you include the large and thick networks of ganglionic nerves, and the ganglions themselves, which pervade and regulate the functions of these great organs of primary nutrition and excretion. This is no small consideration, and *a priori*, the application of a process at once soothing and counteracting to such organs, recommends itself to a physiological physician. But the actual result passes, in many cases, all anticipation. Often and again I have seen it procure sleep to adults, and to children especially, when opiates only fevered and irritated. I have seen it, applied at night, procure relaxation of the kidneys and bowels, by the morning, when all diuretics and purgatives had failed. I have seen it arrest the most violent bilious and nervous headaches. I have seen it stay fits of asthma, of tic douloureux of the face, of toothache, of sciatica, of spasm of the bladder, of universal convulsion in infants, both from teething and indigestion. I have seen it stop the most violent and long-continued vomiting, and relieve, even during application, extreme acidity and flatulence of the stomach. And I have seen it, applied at bedtime, disperse mental clouds which had hung over the soul the whole day, and threatened a night of misery which did *not* come. These things I have seen, not once, but scores of times, and in any of them I should use it with confidence of quick relief, more speedy in some than in other cases. The explanation of such results from a remedy applied over the seat of the great centre of the nutritive nerves of the body, will not be difficult to those who have read the exposition of acute and chronic disease given in the First Part of this work.

The temperature of fomentations over the belly is of great importance. When the symptoms indicate a purely *inflammatory* state of any of the viscera—when, for instance, *mucous* indigestion prevails—the temperature should be high, nearly at the boiling point; the object then being to counter-irritate, to draw blood to the surface, in doing which the nerves of the skin are vehemently stimulated. But when the visceral irritation is of a *nervous* character, and therefore capricious in its phenomena, it behoves to apply the fomentations only warm, so as not to *excite*, but *soothe* the nerves of the skin; for if you excite them, the excitation will be propagated to the brain, and produce malaise there, and sometimes will even be a means of increasing the *visceral* irritation it was intended to subdue. I have often seen fomentations to the abdomen, improperly tempered, induce severe headache, throbbing and restlessness, and heart palpitations, the irritation produced on the skin being promulgated to the viscera and the brain. In more vehement inflammatory action within, such a reflection, as it were, back on the nervous centres from the skin is not likely to occur, the irritation in these being already very great, and of a decided character. These are the leading indications as to temperature, and the gradations between the extremes of purely inflammatory and nervous disorder, must be left to the discrimination of the practitioner.

Hot fomentations should never be applied to the abdomen, except when the patient is in the recumbent posture, and can take rest after them. Being a lowering remedy, especially in diminishing the excitability of the brain, exertion of the limbs should, upon no account, be allowed immediately subsequently to their application. Indeed, it is better that sleep should be taken; and hence, bedtime is the best time for them. They should never be applied within at least two hours and a half after a meal, with the digestion of which they would otherwise interfere.

The duration of this process varies from twenty to sixty minutes every day, or every second day, according to the indications afforded by the degree and kind of internal disorder.

Fomentations, although directly lowering, are, indirectly, a strengthening process. The inflamed stomach of a patient acts, by sympathy, as a spur to the function of the brain, which thereby exhibits a degree of *impulsive* energy that passes for power; the patient can walk and talk quickly, has incessant desire to move, &c.; but all this is *fictitious* strength, just as the energy imparted by alcoholic liquids, or tonic medicines, is fictitious. Fomentations, by reducing the inflammation of the stomach, withdraw the spur from the brain; and the patient, feeling in consequence much loss of his locomotive propensity, says they are weakening him. But they are plainly only reducing his brain to its actual and *genuine* level of strength, by taking from it the morbid stimulant which gave it *fictitious* power. And, meantime, the digestive viscera, being strengthened by the reduction of their inflammation, will, as they improve, afford such *natural* stimulus to the brain as will give it a *sustained* energy. I dwell upon this, as patients often make complaint, in the first parts of the water-treatment, that they are weaker; these fomentations and the wet-sheet packing generally forming those parts; whereas, they are only weaker for a time in the *animal* nervous system, but are becoming permanently stronger in their *nutritive* nervous system; and *that* is the great consideration; strong viscera are always accompanied by strong brain and spinal cord. It is, however, necessary to mark well the point at which to discontinue the use of this remedy; if they be continued one day beyond the reduction of active irritation, they really weaken, and induce the headache and other symptoms already mentioned, which attend their employment at an excessive temperature. In this respect the pulse is the best indicator; when it has lost sharpness and its *jerky* character, hot fomentations are superfluous, and their continuance would render it small, weak, and exceedingly irritable.

Hot and warm fomentations form an excellent commencement to the treatment of those cases, where, with active irritation existing in the viscera, there is such a want of vitality and blood in the entire body as to render the immediate employment of the cold remedies adapted for the reduction of that irritation impossible or hazardous. I have constantly found that in old persons, delicate females, bloodless and greatly debilitated patients, especially in those affected with bronchial and asthmatic disorder of the lungs, it became possible to apply the colder remedies of the water cure, by first using those fomentations for a period. A certain amount of the mal-distribution of blood within was thereby overcome, and a better circulation to the exterior thereby attained, which enabled the skin to re-act upon the cold wet sheet, when it would otherwise not have done so, without much sense of misery at least. Extreme congestion, and extreme general weakness, may be thus coaxed, as it were, into commencing the attempt at self-restoration, whilst other means would have overwhelmed them. By their aid I have often been enabled to begin the treatment of delicate persons in the middle of winter, who must else have postponed it until summer heat assisted the skin.

When there is a good amount of feverishness present, hot fomentations, applied for half an hour immediately *after* a wet-sheet packing and the rubbing sheet or shallow bath, are excellent means for seconding the febrifuge qualities of the packing, and the two together are almost sure to induce perspiration, and terminate the fever.

Local fomentations with hot and warm water are not often required in chronic disease. In the exasperations of *gouty or rheumatic inflammation* of the joints, which occur in the course of the general water-treatment, they may be used with advantage, at a low temperature. At the same temperature they are applicable in certain skin diseases, particularly in chronic *erysipelas*. In bad paroxysms of *neuralgia*, they afford relief applied at a high temperature, the general fomentation being at the same time employed.

When, in disorders of *obstruction*, the efforts induced by the treatment have gone to the length of causing some degree of feverishness and nervousness, the application of warm fomentations at bedtime reduces these symptoms, and thus allows the main treatment by the tonic and stimulating processes to be continued.

§ 2. PACKING IN DAMP TOWELS AND SHEETS.

The same remark which has been made regarding the *weakening* and *lowering* effect of fomentations applies to this process; it is *directly* lowering, but *indirectly* strengthening; it reduces excess of blood in one organ, in order to send sufficient to another, which has too little. Still, it materially reduces the circulation; and where that is very feeble, from deficiency of blood in the whole body, it requires care in application. Hence I have found it necessary to introduce (for it is not spoken of in works on the water cure) the use of towel as well as sheet packing. In very delicate and bloodless patients, I generally begin packing with a single towel placed down the front of the trunk; and they will be able to warm this, and not have the circulation so lowered as when the whole body is enveloped in a damp sheet. By degrees, as the blood begins to circulate better, I put a towel on the back as well as the front of the trunk, and so gradually and safely get on to the employment of the sheet over the whole body. Another advantage of this partial packing at first is, that the arms are free, and this is no slight consideration to nervous and delicate persons, to whom the constrained and helpless position of the entire sheet packing is sometimes very disagreeable, and might, by acting on the nerves, be harmful. By the use of fomentations and the towel packing, I have been enabled to undertake and successfully raise up patients, whom, without them, I must have altogether declined to treat.

The novelty of such a process as wet-sheet packing past, it becomes one of the most agreeable, because one of the most soothing, of all the water remedies. By it, the nerves proceeding from the brain and spinal cord to the skin, and which are morbidly sensitive in all chronic diseases, are relieved, for the moment, from the irritation of the air, and placed in the mild atmosphere of warm vapour which is made by the heat of the body acting on the moisture of the sheet. Instead, therefore, of irritations proceeding from the extremities of those nerves, spread over the skin towards the brain, this last is quieted by the temporary withdrawal of them—so much so, that the patient ordinarily *sleeps* whilst packed, and will sleep then when he could not sleep without it. On coming out of it, therefore, the nervous energy of the skin having accumulated strength by the rest thus given to the nerves, is in the best condition to re-act upon the bath which follows. Add to which, that the quietude of the brain has freed the viscera from irritations which *it* sends to them in the ordinary progress of chronic disease, and thus they, too, are in the best condition for re-acting on the external application of cold. The whole body has been rested, its organic powers have been accumulated, and it can now respond to the stimulus to be applied to its external surface. Accordingly, the shallow or sheet bath is applied immediately, at an appropriate temperature, and the result is a rush of blood to the skin—a rush, be it remarked, produced by the organic powers of the body itself, and not liable, therefore, to be followed by a reflux. This process, repeated day after day, and sometimes twice daily, at length *fixes* a quantity of blood in the blood-vessels of the outer skin, and thereby reduces the disproportionate quantity which was congested in the inner skin, or mucous membranes.

Scientific medical practitioners are aware, that there are two ways of giving health and strength to a frame labouring under disease—viz., by relieving the irritation of some particular part, which disturbs and oppresses the other organs, and by directly giving tone to the really enfeebled body.

The curative and strengthening operation of the wet sheet mainly consists in the former of these ways. In all chronic, as in all acute disorders, there is one organ, or series of organs, whose irritation or inflammation proves oppressive to the other organs, and the cure is to be found in the reduction of this irritation. This fact goes far to explain the very extensive, almost universal, employment of the wet sheet in disease. Its extraordinary power in allaying irritation is one of the most curious facts of the water cure, and of which it is really difficult to give a full and satisfactory rationale. When properly modified to meet the actual state of the patient, it may be said to be the most soothing application that can be administered to the external sentient surface. It may be compared in its calming effects to a poultice placed all over the body; but this is only stating a fact in other words. It carries off feverish heat, and this heat is employed in converting the moisture in the sheet into vapour; so that the patient may be said to be in a steam-bath of his own making. This warm vapour settling on the skin makes it soft and moist, and is very often mistaken for perspiration; but the wet sheet, used for the purpose of reducing irritation, is not, as a general rule, allowed to remain long enough to induce sweating—which is a directly opposite process, and intended for a different purpose from the wet sheet. But, whatever be the physiological principle upon which the wet sheet acts, it will be found, during the treatment of most diseases by the water cure an indispensable remedy, and one on which the practitioner can safely rely.

Being applicable where there is morbid irritation, it is an invaluable remedy in all internal and external inflammation, acute and chronic. In acute disease it is frequently changed, the patient not being permitted to remain in it longer than suffices to warm the sheet, which, in fever for instance, may be a quarter of an hour, or even less. It is thus changed several times consecutively, increasing the time as the heat is reduced, and the shallow bath, cold or chilled, follows. In this process two *evident* effects are produced, *an immense quantity of heat is carried off from the surface, the pulse becomes soft, and falls in rapidity.*

After this, when the patient has been some time in bed, the heat on the surface again accumulates: but as the internal organs have been relieved, and the skin placed in a more favourable state for perspiration, this last commonly ensues, *and Nature relieves herself.* Should, however, perspiration not take place, and, instead of it, a return and continuation of the dry feverish skin, the wet-sheeting is re-commenced as before; and so on every five or six hours perhaps. It should be remarked that, in complaints which a high degree of fever accompanies, it is generally necessary to employ only three or more blankets for a covering.

This is the ordinary mode of applying the wet sheet in acute disease; and its application is only modified in frequency, according to the intensity of the feverish or inflammatory symptoms.

Among the advantages of this safe, simple, and refreshing means of reducing fever and inflammation, is that of not causing any actual loss of strength to the patient, as by bleeding and strong medicines; and, as a necessary result, it is not attended with long convalescence or debility.

But in chronic diseases of long standing, a variety of modifications are called for, both with reference to the symptoms originally presented, and to those which arise in consequence of the water-treatment.

Patients often present themselves, in whom the vital energy is so wofully lowered by long disease and bad nutrition, with bad blood, that any considerable amount of stimulus would prove too much for their powers. These persons would never at first get warm in a cold wet sheet, because, as this withdraws the animal heat from the surface, the internal parts do not possess vigour enough to labour to supply that which has been abstracted. The patient, therefore, remains cold and miserable, and is, moreover, liable to have the head congested, and headache follow on the wet sheet. In such cases—and they are to be judged of beforehand by close examination of the peculiarities of the patient—it is expedient to wring the sheet out of warm water, and have it applied around the body at a temperature of about 70° or 75°; a temperature which, as it does not suddenly abstract a large amount of heat from the debilitated body, gives the latter a smaller shock, and more time and opportunity to supply, by the action of the internal organs, that which has been lost on the external surface. Gradually, as by the aid of drinking water, and by the reduction of irritation by the sheet, the internal organs, and the skin recover, and the patient acquires appetite and power of blood-making, the temperature of the sheet is then lowered until it comes to be applied quite cold, by which time the heat-begetting power of the body equals the heat-withdrawing power of the sheet; after which the balance is changed, and the body *generates more caloric than the sheet can withdraw* in the time usually given to lying in it.

For a similar reason, it is necessary in some instances to apply the wet-sheet only over the *trunk* of the body, leaving the extremities, or at least the legs, with the dry blankets around them. For there are persons whose organic energy may suffice to supply the surface immediately over the vital organs with caloric, but would fail to do so with regard to the limbs, which are more distant from the active centre of vitality. The sheet is then made to reach only to the hips; and this is persisted in until, as in the former instance named, the appliances of the cure increase the amount of organic energy in the body generally. As this is in progress, more and more of the sheet is gradually applied over the limbs. As a general rule, it is better not to include the feet for the first few times of packing in the sheet; the exceptions being those individuals in whom there is either a great amount of feverish heat, or the nutrition of whose body has not been much encroached upon by long disease. This necessary modification is practised by PRIESSNITZ to some extent.

It is not unfrequently necessary to exclude particular portions of the trunk from the operation of the wet sheet. Thus, in asthma, for example, the patient is ofttimes able to bear, and derives the greatest benefit from the remedy, when a dry towel is placed between the skin of the front of the chest and the sheet; when otherwise, he would be unable to get warm in it, and the difficult breathing would be most distressing. Where also the heart is nervously irritable, the same application of a dry towel over the region of that organ is found to render the sheet both bearable and efficient for good: when the sheet becomes warm, the dry towel can be put at the side in some cases. But this only applies to *nervous* disorders of the contents of the chest; all *inflammatory* diseases there, from a simple catarrh to the most serious states, require that the sheet should be in immediate contact with the surface of the chest.

There is no case in which this indirect application of the sheet to the *stomach* and *bowels* is desirable; it would seem that that part, being the starting-point of almost all ailments, both bears and requires the full operation of this most powerful and wonder-working agent in the water cure. The sheet will always be found first heated over this region.

The time in which it is necessary to remain in the wet sheet must vary with the powers of the individual submitted to it. Suppose a patient to be forty or forty-five minutes before he feels thoroughly warm in it, it is generally advisable to leave him for an hour and twenty minutes, or an hour and a half from the first packing. The accumulation of warmth then produces sufficient circulating power in the skin to react upon the subsequent ablution in the shallow bath or dripping sheet. Moreover, this slowness in warming in the sheet implies an inveterate degree of irritation and oppression in some internal organ, which, therefore, requires a full quantity of the soothing and derivative effects of the remedy in question.

When, however, the patient speedily—that is, in ten or fifteen minutes—gets thoroughly warm in the packing, an hour is the outside time requisite for him to remain. There are some cases where even this is too long, and they are known by headache, swimming, and sensations of fainting showing themselves. In these cases, the irritation to be removed not being of that inveterate kind which interferes with blood-making and heat-making, caloric soon accumulates, and to such an extent as to cause the sheet to pass from its soothing to its irritating and depressing state of agency; and the pulse falls so low as to cause irregular circulation in the brain, and the phenomena above mentioned.

Between these extremes of peculiarity as regards the action of the wet sheet, there are numerous shades. But to detect any of them, and thus to obtain all the good available from the remedy, requires not a small amount of medical knowledge and experience in the practice of the water cure.

As one great result of the wet sheet is to produce augmented and healthy secretions from the mucous membranes—especially the digestive—the state of those membranes should be accurately examined previous to ordering it, and during its use. It is by virtue of this power that it effects such wonders in some cases of obstinate constipation.

The secretory agency of the wet sheet alluded to points out its impropriety—or the care with which it must be used—in all cases where the feebleness of the bowels readily leads to exhausting diarrhœa. Yet there is a diarrhœa connected with acute mucous inflammation of the stomach in which it is most useful.

So long as there is internal irritation to remove, the patient goes on daily gaining power of speedily warming in the sheet, and the time for his remaining in it consequently diminishes. But when irritation is subdued, the wet sheet, if continued too long, tends to produce the symptoms of depression already mentioned; the patient does not feel comfortable in it, though it be warm; he gets out of it weary and weak, and his head begins to suffer.

Many curious phenomena take place in some patients by frequent use of the wet sheet; amongst the most singular is that of its becoming of a beautiful rose colour. This will sometimes continue for a week or two, then cease, and in a few weeks return again. In other cases, the sheet is found, when taken off the patient, after an hour's packing in it, to be glutinous, and to have extracted fœtid matters from the skin.

§ 3. THE SITZ BATH.

In one of the forms of administration, this is decidedly a lowering bath, and is admirably adapted for the treatment of active irritations, as well as conditions of obstructions; so that it is applicable in almost all cases of chronic, as it is in very many of acute disease.

The sitz bath is used either as a *tonic* or *derivative*. In the former case it is taken cold, and for a time varying from five to fifteen minutes, seldom exceeding the latter period.

The rationale of its operation in this character is sufficiently simple. The stimulus of the cold causes the blood-vessels of the part and neighbourhood to which the water is applied to contract, and thereby rid themselves of any excess of blood; and as this stimulus has not been carried to a great extent, there is very little subsequent return of relaxation in those vessels; still there is some; and it is for this reason that it becomes necessary to apply the stimulus again after short intervals; short sitz baths always require frequent repetition, sometimes as often as six or seven times in the twenty-four hours. It will appear from the above, that the short or tonic sitz bath is applicable in all cases where there is an enfeebled or congested state of the parts contained within the hips; for instance, in excessive menstruation, leucorrhœa, loss of muscular tone, and protrusion of the lower gut, &c.

It is, however, more especially for its *derivative* effect that the sitz bath is most frequently employed. The class of disorders for which such effect is desirable, is far more numerous than those in which the *tonic* result is wished;

and it includes some phases of brain congestion, obstructions of the liver, congestion of the stomach and its nerves, stoppage of courses, and constipation of the bowels—diseased states which include all the forms of digestive and nervous complaints. Here the stimulus of the cold is applied so long, that the blood-vessels of the parts contained within the hips, after a violent tonic contraction, fall into a state of great consequent exhaustion and relaxation, whereby a large quantity of blood is admitted and retained in them. The result is doubly advantageous; for first, a mass of blood is drawn from the upper organs of digestion, the liver, stomach, &c., and even from the head, whose obstruction and congestion is therefore relieved; and secondly, this blood so made to congest in the lower organs of digestion, and in the genital and urinary organs, secretes the matters peculiar to those parts, and thus the bowels are made to act, and the monthly evacuation of females is removed, and the functions of the kidneys and bladder are promoted.

The temperature at which it is fit to take the sitz bath is important. Its tonic effect, as already explained, is best, and indeed only obtained by the cold degrees—that is, under sixty degrees. The degree at which to obtain the derivative effect will vary with the organic capabilities of the patient, and these the physician must ascertain by previous investigation. It must also have reference to the patient's power of taking exercise after it; for if he remain cold for want of exercise, the tonic and not the derivative result will ensue; and it has been shown that the cases for these are diametrically opposite. Patients in a very low condition of vital activity, but in whom it is desirable to produce derivation of blood to the lower organs of digestion, should, in the first instance, be submitted to water of a tepid temperature, or nearly so, and the degree should be lowered as the strength increases. The amount of derivation in such event is not so great nor so permanent as when water at forty to fifty degrees is used; but a judicious practitioner will suit his remedies to his patient's power, and not go by blind rules. The water cure is the *cold* water cure only in time and place, and where the individual peculiarities permit, or the patient has been brought into a state to benefit by it.

In applying the sitz bath in its *tonic* character, it is desirable to use it often; and this, because the relaxed blood-vessels of the viscera of the pelvis may not have time to fall again into an exhausted state and re-admit fresh blood. It is chiefly in its *derivative* action that it produces a lowering effect, and is therefore adapted for states of active irritation of the digestive viscera and head. By such a bath the pulse is reduced in rapidity and hardness, to an extent that many would scarcely credit, who think that bleeding and fox-glove are the only means of reducing it. On the other hand, the derivation of blood that is made to the lower organs of digestion is most powerful, in conjunction with other remedies of a stimulating character, in removing obstructions of the liver, spleen, &c. It is in this way that it cures piles; it derives from the liver towards the rectum, induces bleeding of the piles, and thus relieves at once them and their cause in the liver. Both the short and the long sitz bath have the effect of quieting the brain and nervous system. In sleepless nights, the best opiate that can be taken is a cold sitz bath of four or five minutes' duration, and the sound sleep that certainly follows is well worth the exertion of the resolution to get up and take it. I have repeatedly known patients to fall asleep in a cold sitz bath of long duration, and they always pronounced it a refreshing sleep. Both the short and the long sitz bath are beneficial in removing headaches of a nervous or bilious kind—in staying vomiting, flatulent spasms, &c. When used to open the bowels, it is well to rub the abdomen with the wet hand during the last eight or ten minutes of the bath.

§ 4. THE ABDOMINAL COMPRESS.

In the great majority of cases presented for treatment, I have not found any superior advantage in the compress which goes all round the trunk over that which I ordinarily suggest, and which is applied over the abdomen alone; whilst the latter has the advantage of being of smaller bulk. The object of the compress is to produce and maintain over the abdominal viscera an amount of moist warmth, which shall act as a counteracting and soothing agent to the irritation which is fixed in those viscera. The sympathies between them and their anterior coverings are exhibited in various ways, in the acts of emptying the bladder, the bowels, womb, in spasms of the muscles of the belly, &c.; the irritations of distention in those viscera producing violent contraction of the muscles which inclose them. In the converse instance, if cold be applied to the external belly, it produces a rumbling in the bowels, expulsion of wind, of urine, contraction of the womb in floodings of that organ, &c. At all times, under ordinary circumstances, a degree of contraction obtains in them sufficient to sustain their contents—a contraction which is due to the sympathy in question. When the calibre of the bowels decreases, as in some forms of *gastro-enteritis*, the muscles of the belly cling to them until the spine may sometimes be felt through the trunk. When leeches are applied over a portion of the viscera which is inflamed, the blood they draw is invariably dark-coloured and disordered; draw it half-an-inch beyond that portion, and it is vermilion and healthy-looking. This curious exhibition of the organic sympathy between the bowels and their exterior coverings was first mentioned by BROUSSAIS, and I have verified it in a great number of instances during the last eighteen years, particularly in cases of duodenal inflammation and enlargement. It is upon this sympathy between the viscera and their coverings that the action of the compress is founded. Properly applied, therefore, it is a *constant* opiate to that constant irritation within, which is the groundwork of all chronic diseases. Hence, in almost all those diseases, it is applicable; but it must by no means be worn equally long by all patients. In some, females particularly, the sympathy alluded to is so exquisite, that when the internal disorder is of a nervous character, the continued employment of the compress tends to bring on feelings of sinking, hysterical nervousness, &c. In such instances, it should be worn only for two or three hours at a time, or should be frequently refreshed from cold water. Others exhibit this close sympathy by the effect of the compress, in increasing the secretions of the intestines. I have known strong men, whose bowels would at any time act after three or four hours' wearing of the compress, as freely as if they had taken a mild aperient. Indeed, it is in this latter capacity that it is usually employed; although, from what precedes, it is plainly a narrowed view to take of its operations. Its aperient effect is due to the relief which its soothing and counteracting action brings to all the viscera of the abdomen, and especially to that portion of their nervous system which regulates the functions of the upper digestive organs. Hence, when those nerves are exquisitely sensitive, and congestion and obstruction do not exist, but the nervous condition only, the phenomena of depression already mentioned are liable to occur. The same is probable in any case, if the compress be not wrung afresh from cold water sufficiently frequently. In many cases, in fact, it is desirable that it should be refreshed as often as every two or three hours.

Aiding thus in the withdrawal of irritation from the viscera, the compress influences in a very marked manner the function of the brain and spinal cord, and, through them, the power of the limbs. In this, as in other particulars, it is a kind of partial wet-sheet packing. That it soothes the brain and spinal cord is shown in this, that, if freshly applied when sleepless at nights, it is as certain a sedative and narcotic as can be taken. Or let a person be wearied, jaded with walking or talking, and put on the freshened compress, he will find renewed alacrity. An invalid will also quickly find the difference between walking with and without the compress, so much does it improve the walking power. In all these cases, it acts by reducing visceral irritation, which kept the circulation in the brain and spinal cord in the irregular conditions which produce sleeplessness, restlessness, and oppression. Thus quieting the brain by the medium of the viscera, it, on the other hand, causes the brain to cease from sending its morbid sympathies to the viscera. Its action in this way, however, is interfered with, if it be allowed to become too hot without being refreshed. Hence, it is not always advisable to wear it at night. In those who are not constitutionally heavy sleepers, it is apt to break the sleep, or render it exceedingly dreamy. On the same principle is to be explained an extreme state of mental fidget, which I have occasionally seen it produce, and which disappeared when it was refreshed.

In many instances of *nervous indigestion*, I have found it best to take the compress off during and for an hour or so after a meal, especially the heavy one of dinner; it seemed to increase the fulness, &c., of the stomach. I can only explain this by its interfering with the rush of blood towards the stomach, which takes place when the important function of digestion begins, and requires so much of the secretorial power of that organ. The heated compress retains so much blood *over* the stomach as to counteract the rush of blood *towards* it. But in the course of an hour or two, digestion being fairly in progress, the stomach, congested with blood, heated, and becoming jaded with its labour, is assisted out of these disagreeables by a fresh compress, which gives it power to expel flatulence, and draws the now unnecessary quantity of blood from it. When applied to females who suffer from disorder of the upper organs of digestion, but are subject to excessive menstruation, it is advisable to confine the compress to the portion of the abdomen above the navel. In very excitable, but feeble persons, it is well to wear it only when walking, or on horseback.

Sooner or later, the abdominal compress causes an eruption of some kind on the skin underneath it. Before, or at the same time with this, it may bring on an exudation of glutinous matters. In one case (of bad nervous headache in a lady, who had taken enormous quantities of physic for it), I saw an exudation of matters of a brownish hue, which stiffened the compress as if with starch, and gave out the unquestionable odours of colocynth and aloes. It continued for one week in varying quantity, then ceased, and broke out again in five weeks afterwards, continuing for a fortnight, and smelling of aloes, gamboge, and at times of camphor. I have often seen colours, and smelt odours of various kinds pervading the compress, but could never be certain of either beyond the fact of a strong medicinal smell. In the instance alluded to, there was not the slightest doubt on the subject.

Local compresses are adjuvants to the abdominal one in certain maladies. Applied over gouty and rheumatic joints, they certainly obviate a great deal of the pain and tension attendant on the inflammation of the unyielding fibrous texture of the ligaments and muscular sheaths. In fact, in all local *inflammations*, they are useful, although not curative. But if the pain be of the *neuralgic* kind, I have not found them of much use ; in *nervous* gout, for instance, they are infinitely less palliative than in the *chalky* kind ; in toothache from cold, they act with wonderful efficacy, whilst in that of a purely sympathetic kind they avail little. Yet in the paroxysm of *sciatica*, a large wet compress round the thigh is a pretty certain relief to it : also in the nervous condition of the neck of the bladder in males, which leads to the passage of frequent and small quantities of water, and is often an accompaniment of nervousness, the compress to the perineum is of benefit. In these and some other instances, it would appear that if the nervous pain or irritation is severe enough to involve the surrounding tissues in temporary acute inflammation, the compress acts well. For the rest, it is well to apply it to all local pains and irritations; in most of them it will be very beneficial, and it never does harm. Like the abdominal compress, the local one urges the part to exudation of matters and to eruption. The former generally consists of excessive deposit of cuticle in a semi-fluid state, and the quantity of this taken from the surface of a knee-joint in a single day would scarcely be credited. I cannot say that I have met with the medicinal exudation of ointments, &c., previously applied, which is mentioned in some works as of very common occurrence.

An excellent local compress is one applied all over the head, and well covered with a thick dry nightcap. If the patient has plenty of hair, it is sufficient to wet that and cover it. In ordinary cold in the head, this compress worn all night is of almost certain efficacy; the patient awakes with his face bathed in perspiration, and the mucous membranes of the nose and eyes free from irritation, and secreting their usual bland fluid. For feverish headaches and for sleeplessness, this is also a good remedy.

For *bronchial cough*, a compress is applied over the chest, and certainly facilitates expectoration; that is, reduces inflammation. But here the sympathies are even greater than in the abdomen; and if retained too long, and without sufficient freshening, it is apt to induce faintness, hysterical breathing, palpitations, &c. In *sore throat*, of a purely inflammatory kind, a compress is useful; but in *relaxed* sore throat it is doubtful, or at least should be very frequently changed.

It is well, during the application of compresses to any part, to wash it from time to time with cold water, on the same principle that one washes the body after packing in the wet sheet, to strengthen and give tone to the skin.

I believe that a great deal remains to be observed and recorded concerning the operation of the compress in its general, that is, its abdominal, and in its local application. I feel convinced that, in a quiet way, it works a great part of the good result in chronic disease.

§ 5. THE DRIPPING OR RUBBING SHEET.

This is the first of those appliances of the water cure which act by stimulating the nervous and circulatory systems of the body. The remedies hitherto mentioned reduce irritation in the organs, and thereby leave their organic energy at liberty to act, if, after all, it be sufficient in degree—a point which the practitioner should be able to determine beforehand. In order to aid it when thus set at liberty, certain stimulating means are used; these are the *dripping sheet*, *cold and tepid sponging*, and the *cold and tepid shallow bath.* When the state of irritation has passed on to that of obstruction and excessive congestion, and the *vis vitæ* is oppressed, and unable to act from that cause, or when it is desirable to bring it into such play as to induce a critical and vehemently counteracting action on the skin or rather great emanatories, other stimulating processes are found for that purpose in the *sweating process* and the *douche bath;* to which the *spinal washing* may be added. A minor process having the same aim is the *foot bath.*

The dripping sheet is generally used as a preparative process for the skin, if that organ has been hitherto unaccustomed to the impression of water below its own temperature: and the shock is considerably modified by the attendant friction. The blood-vessels of the skin contract in the first instance, and subsequently relax, admitting more blood into their calibre; a double action, which is reiterated by the friction, until a good amount of blood is fixed in the skin, to be maintained by subsequent exercise. But besides, this stimulating impression is made upon the myriads of nerves of animal life spread over the skin, and, derived from the brain and spinal cord, modifies the circulation in these last, and through them affects the vital energies of the viscera. It is in this manner that it takes off languor, gives alacrity to mind and limb, clears away intellectual and moral cloudiness, at the same time that it generates appetite, removes thirst, causes expulsion of flatulence, &c. More than this, its repeated and frequent use will reduce some of the symptoms of very *intense* derangement of the animal nervous system, such as attacks of *tic* and violent *spasms* of the limbs and trunk. When speaking of the wet-sheet packing, I have alluded to the favourable condition in which it placed the skin and viscera for the best re-action on the subsequent process of the dripping sheet. Were the patient to remain just as he comes from the packing, his skin would be very liable to take cold from the operation of the air, the stimulus of which is not strong enough to insure sufficient re-action. But when the dripping sheet, with the friction, comes to play upon the skin with its organic energy accumulated in the packing, the re-action is great, the blood remains in the skin, and its presence prevents the taking of cold. Hence it, or some cognate process, is indispensable after the wet-sheet packing. For *this* purpose it is sometimes prudent, in cases of great organic feebleness, to commence with a tepid sheet, and only gradually reach the cold temperature. But when it is used alone, for the purpose of refreshing the animal nerves and the brain, or for reducing their painful or spasmodic affections, it should always be cold, and the accompanying friction strong and long-continued: six or eight sheets in succession are sometimes thus administered. To very delicate persons I often apply, in the first instance, only friction of the trunk and arms with a wet towel; dry and dress those parts, and then have the legs rubbed in like manner. Re-action and comfortable sensation may thus be obtained, which would be wanting were an entire sheet thrown at once over the entire body. In persons with apoplectic heads such a commencement is likewise advisable.

As the dripping sheet, although less stimulant, answers in some degree the objects of the shallow bath, to be presently mentioned, it is a good substitute for it, when that bath is difficult to obtain, as in travelling. If there be feverish pulse and heat, the dripping sheet taken at bed-time induces sleep, by relieving the brain from the irritation of the skin. But if there be no signs of feverishness, it will rather prevent sleep, by exciting the skin, which then excites the brain.

§ 6. THE SHALLOW BATH.

This application is the next in tonic and stimulating action to the dripping sheet, and stands between that bath and the douche. Seated in eight or ten inches of water, with the legs extended in it, the patient is sponged and splashed with the water of the bath; or, besides this, has more or less water poured over the shoulders, and very often over the head as well; considerable friction being, meantime, employed. Thus there is a constant displacement and renewal of water on the surface, and repeated stimulation is thus applied to its nerves. The dripping sheet differs in having no renewal of fluid, and therefore affording much less stimulus, and withdrawing much less heat; whilst in the douche the displacement and renewal of the water is not only more continuous, but is accompanied by the additional stimulus derived from the weight of falling water. It is thus that patients suffering from active irritation commence with the dripping sheet; and, irritation being subdued, and better re-action insured, end with the douche. Between these the shallow bath forms a very useful and widely-applicable medium; patients are longer in that stage of chronic disorder in which they can bear the shallow bath, than in those stages in which the dripping sheet is sufficient, or the douche too powerful.

From the *sitting* position in which the patient is placed, the feet and hips are necessarily more cooled and powerfully acted upon by the water than the other parts of the body. After the bath the determination of blood is greatest to the lower extremities; and the great nervous centres of the brain and digestive organs are relieved by their sympathy with these parts. By the general ablution and rubbing, a chill is prevented, and the circulation equalized on the whole surface of the body.

When used alone, it is simply for the purpose of maintaining vigorous circulation on the surface, and the best time for taking it is on getting out of bed in the morning.

Employed after the envelopment in the wet sheet, it operates by indirectly fixing the circulation on the external skin. The wet sheet has the property of equalizing the circulation of blood, when it is congested on the mucous membrane, or in any internal part, and an increased quantity of blood flows towards the skin. But as the warm vapour, which has been for some time surrounding the body when enveloped in the sheet renders the skin soft and sensitive, it becomes necessary to obviate this by stimulating the skin with water, and inducing a slight shock, the secondary effect of which shall be to send a rushing tide of blood to the surface, and render it independent of the external atmosphere. Thus the blood is first of all gently drawn to the surface, by the soothing and gradual action of the wet sheet and the vaporous warmth that is generated, the skin at the same time being rendered sensitive; taking advantage of which sensitiveness, you, in the second place, by friction in the shallow bath, cause a rush of blood to the skin; and by repeating this double process day after day, a healthy and equable circulation is induced throughout the body; the blood being at length permanently fixed in proper quantity in the skin, at the expense of the morbid excess which existed heretofore in the diseased internal part. The more intense and great fixature of blood in internal parts is, the more frequently this process requires to be repeated and the longer continued. In some acute inflammations, indeed —as of the lungs or brain—friction in the shallow bath requires in some cases to be persevered in for a length of time, after using quickly repeated wet sheets.

The temperature of the shallow bath, after one wet sheet, will be regulated by the considerations that have been noted when speaking of the wet sheet itself.

As a sequel to the *sweating process*, the shallow bath is employed to obviate the relaxation of the skin which would infallibly ensue, were that surface merely dried after the outpouring of sweat by its blood-vessels. To these last the cold acts as a grateful and beneficial tonic and stimulant; but the secondary effect is still to fix a good quantity of blood on the exterior. The duration of the bath after sweating, varies from two to eight or ten minutes. The temperature, as a general rule, is always cold; the frame that is suited for sweating being in most cases able to bear the common temperature of water.

For the purposes aimed at in using ablution and friction after the sheet or blankets, the shallow bath is in almost every particular preferable to the plunge bath. The plentiful friction produces an equally great and fixed circulation of blood in the skin; whilst the shock of the water being more gradually applied, no risk is to be apprehended of the brain suffering from the sudden and violent revulsion which accompanies the plunging up to the throat in cold water, the skin still glowing with heat. A physician should well examine his patient's powers, and be well certified of the integrity and strength of his brain circulation, before he orders the plunge bath.

The temperature of the shallow bath is regulated entirely by the patient's organic energy. It is of the greatest importance to ascertain this ; for, to a person with good re-active power, too *warm* a shallow bath will prove a *cooling* and miserable process, and will be followed by flabby, clammy, and pale skin ; whilst, if it be applied too cold to a very debilitated patient, the same results will follow, but in consequence of a more direct process. In the former case, the blood-vessels of the skin, not having received sufficient stimulus, cannot re-act sufficiently, and therefore receive and retain very little blood ; in the latter case they have received too much stimulus, have thrown their blood too vehemently on the internal organs, which, from feebleness, are unable to send it back again to the skin. Practitioners of the water cure should certainly refer to these considerations of organic energy in regulating the temperature of the shallow bath ; but to hear some practitioners of drug medication, one would imagine that in *no* case should a temperature under the boiling point be applied to the human body ; whereas, if they would take the trouble to learn by experience, rather than assert in prejudice and ignorance, they would find that the body, even in a weak state, is capable of re-acting on a much lower temperature than even ignorance or prejudice would imagine : and they are generally very imaginative too.[*] But it is, on the whole, better, in cases of bloodlessness and emaciation, to begin at about 70° or 75°, and gradually reduce the degrees as we may find necessary. The repeated shocks of renewed water in the sponging and splashing, added to the abundant friction that should be employed, render complete re-action attainable at that temperature at the commencement of even many extreme cases of the above kind.

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[*] Thus two apothecaries swore, the other day, at a coroner's inquest. that water at 85° Fahrenheit would cause fatal congestion, and spoke of water at that temperature as a *cold* bath, They did not swear that they had *seen* it produce such a result, only to their *belief* that it would : but what is their belief worth without experience ? Not so much even as that of the laceman who passed himself off for a doctor and administered the bath, though accused of manslaughter for so doing. If they had consulted medical writers on the subject, they would further have found that 85° Fahrenheit constitutes a *tepid* bath.

Another mode of graduating the shock and modifying the bath to weakly persons, is by having water at 80° or 85°, and washing the body with it first of all, and then gradually adding cold water, so as to reduce the temperature to 65° or 60°. A very bearable amount of stimulus is also giving by washing the patient in water at 80°, and then pouring cold water over the head and shoulders. To many this is more refreshing than either 80° or 50° alone would be.

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§ 7. THE SPINAL WASHING

This is a process of my own introduction; and, although I had been for some time employing it at the date of the first edition of this work, I did not consider my observation of it sufficiently matured to speak of it in a published form. It is practised thus :—The patient sits on a board placed across the lower end of a shallow or sitz bath, with his back turned towards the bath. The bath attendant then dips a towel into a large can of cold water, and rubs it up and down the length of the spine, not waiting until it is warmed by the patient's body, but constantly changing the water in the towel, so as to renew the shock of the cold as often as possible. This is continued for from three to ten minutes.

The operation of this application will be sufficiently obvious from what has preceded. It stimulates by the constantly renewed cold; and the re-action is so great as sometimes to amount to a sensation of burning along the track of the spine. Applied too, as it is, immediately over a great nervous centre, it has a more direct and powerful action on the nerves of locomotion and sensation, proceeding thence over the whole frame. By virtue of this, it clears the head, when it is confused, pained, or lethargic; it gives alacrity to the limbs, and spreads over the skin a sense of comfort which is due to the stimulus propagated along its nerves. Further, by the sympathy with the organic nerves it expels flatus from the stomach and intestines; and occasionally acts as a very speedy aperient.

In all this agency it imitates, at a distance, the douche, as will be seen; and I have accordingly found it useful as a preliminary of, and introduction to the former, in persons in whom it was especially necessary to be cautious in the gradation of stimulus to be applied. There are even some for whom this particular process served every purpose of the douche; so sensitive and feeble were their systems.

Precautions are required, however. In cases of irritable spine, the nicest adjustment of the temperature of the water employed is necessary. If it be too cold it will induce headache, spine ache, or even spasm of some of the muscles of the arms or ribs. The same is apt to ensue if applied too long, or too nearly to the skull. In very delicate persons, I generally begin by using it only to the lower two-thirds of the spine; gradually extending it upwards, and with that extension prolonging the duration of the bath and lowering the temperature of the water. Persons who cannot bear the cold of the sitz bath, re-act well upon this process; and its effects are somewhat similar. It is for the most part applied twice in the day. The duration which is most tolerable to the majority of patients is five minutes. A good amount of dry friction should follow it.

The several states to which the spinal washing is applicable, are nervous headache, congestion of the brain which arises from mental causes, hysterical palsy, dyspepsia with flatulence, constipation of the bowels, scanty and deficient menstruation, and chronic spinal irritation. My experience marks it as a most useful addition to the forms of water applications, as it affords aid to the gradation of the water-treatment in delicate persons; a thing which is much wanted. It is a great desideratum to have the means of increasing the power of the agents in exact uniformity with the augmenting powers of the patient.

§ 8. THE DOUCHE.

Under the head of "Shallow Bath," I have referred to the stimulus afforded to the nerves of the skin by the repetition of the shock in the acts of affusion and friction, and also to the withdrawal of heat by the frequent changing of the water in those acts. The whole result of the shallow bath thus applied is a re-action towards the surface, and of the pulse, in proportion with the temperature of the water and the duration of the bath and friction; the colder the water and the longer the friction, the greater the re-action—always supposing that the body is in tolerable organic strength. But all this is a slow process compared with the douche, to which it has a close resemblance, save in degree. In the douche, the stimulus afforded by the repeated changes of water is very much greater, for the water is pouring incessantly upon the body, and therefore is incessantly changing. By this too, a great amount of heat is withdrawn from the surface. And instead of the friction of the hand employed in the shallow bath, there is the stimulus imparted by the weight of a column of water falling eighteen or twenty feet, and varying from one inch to two inches and a half in diameter.* Besides this, the water is made to fall upon the back and along the course of the spinal cord, when it is used for producing a constitutional change; although it is also applicable as a topical remedy. The whole result then, of this incessant change of water, of this withdrawal of heat from the surface, of this weight of falling water upon a sensitive part of the body and along the course of the spinal cord, is to bring on an immediate and great re-action of the nerves of organic and animal life, and consequently of the circulation. After a shallow bath, this re-action is only obtained after more or less exercise, and is by no means to the same extent; but after the douche, the pulse is immediately quickened, the nervous system roused and excited, and the skin reddened and warmed. Hence it is one of the remedies only applicable to those who either begin the water-treatment with a tolerable amount of vital energy, or at the latter end of the treatment, when, by means of the other processes, they have acquired it. Applied moderately and for a short time, it is tonic to the brain and stomach, and derivative to the skin; continued for a long time and for weeks in succession, it goes further, and aids in rousing that constitutional tumult which terminates in a crisis of some kind.

A mode of moderating the application of the douche is to stand under it in such a manner that it shall not fall at right angles to the spine, but in a slanting manner. For this purpose it is sufficient to stoop but little. As the capability of bearing its full force increases, the angle of the contact may be made less acute by stooping more. As the chief thing to be feared in administering the douche is the effect on the brain and heart, I constantly tell my patients, in whom there is a possibility of such effect, to allow the column to fall only on the *lower* half or two-thirds of the spinal column; and I find many able to bear this who would be injured by its fall on the portion of spine near the head, or opposite the chest.

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* I employ douches at Malvern of the several diameters of one inch, two inches, and two inches and a half, the fall being twenty feet.

The douche is a powerful auxiliary to the general treatment, but its use requires great discretion—a careful inquiry into the state of the constitution of the patient, and a knowledge of the pathological state he may be labouring under. It puts the whole system into a state of activity and excitement, forcing the blood to the surface, acting on the stomach and bowels, and increasing the activity of all the functions. When used at the proper time, it forwards the crisis that the system may be preparing.

It is never applicable as long as any amount of local irritation exists; and to ascertain the exact point at which, such irritation being about to cease, the system requires to be stimulated and aided in its efforts to throw it on the exterior, some tact and experience are required. If a patient be sent under the douche in whom there is an inflammatory condition of the stomach, for instance, this will certainly be exasperated, and the head will simultaneously suffer. For, as the shock of the falling water is first impressed upon the extremities of the nerves which proceed directly from the brain, it is conveyed immediately to the latter organ, which, sympathizing strongly at all times (and especially in the supposed case) with the stomach, transmits to the inflamed digestive organ the shock itself received from the skin; and thus brain and stomach are thrown into disorder at once, and headache, tremblings of the legs, somnolence, and sometimes nausea, are induced.

For the same reason the douche is inapplicable in cases of *apoplectic* fulness of the head, though not always so in *congestive* or *atonic* fulness of that organ. And great care is requisite in determining which of these states predominates. In pure congestion of the brain, unaccompanied by any inflammatory condition of the digestive canal, well-regulated douching is of the first benefit, and will prevent the palsy of the limbs which more or less extensively follows if it be left to itself. Whereas the same in apoplectic fulness would in all probability hasten a seizure; and, unfortunately, such has been the result in some establishments where the advice of competent medical men has been dispensed with.

So also when that species of indigestion is present, in which the nerves of the entire abdomen have lost their power of controlling the circulation there, and now the liver, now the stomach, and again the bowels, are the seats of transitory inflammations, and the *constant* symptom is an irritated or depressed state of mind, the douche is rarely applicable, or requires to be used with reference to the passing condition as shown by the pulse, tongue, &c.; it may thus be beneficial to-day, and injurious to-morrow, and the physician must exercise his attention and discrimination accordingly. Such cases are but too frequently those which come for assistance from the water cure, after seeking it for a long time in vain from other plans of treatment.

On the other hand, the douche is highly beneficial, and may be freely employed when, by fomentations, wet-sheeting, and sitz baths, &c., local inflammations of the mucous membranes of the digestive or urinary canals have been subdued, and the *tonic* effects of the treatment alone are required. This is the reason why it is so seldom used in the outset of the treatment; for the inflammatory states in question form the basis of the great majority of diseases that are presented to the water cure.

Again, when the malady of the solid organs of digestion —the liver, spleen, and sweetbread—consists in a sluggish retention of blood in their substance, which impedes their function, and thus generates slowness and imperfection of digestion, torpid bowels, &c., the state, in short, to which the term "obstruction" is commonly applied; in such cases a stimulus applied to the extremities of the nerves, and transmitted through the whole nervous system, rousing the circulation, is what is wanted, and is well supplied by the douche.

When a similar state of "obstruction" exists, and has existed for a long time in some portion of the brain or spinal cord, maintaining a state of palsy, of more or fewer of the voluntary muscles; in palsy of some years' standing, and when the appetite and digestion are good; this application of the douche is of the first consequence. But, as before explained, there must be no local internal inflammation.

When more or fewer of the limbs have been stiffened by old rheumatism or gout, and the chronic inflammation and derangement of the digestive organs, which first caused this lamentable state, have been subdued in a great degree, or entirely, the douche plays a powerful part in reproducing that action of the joints themselves, which affords the natural lubricating fluid in them, as well as rousing that action in the nervous system which enables the muscles of the limbs to resume their function, and thus assist in getting the joints into play again. Here, too, the internal inflammation must be first of all got rid of; in every case this is a *sine quâ non.*

In patients who—from the devastating effects of mercurial or iodine courses—have that portion of the nervous system which regulates the circulation and secretion shattered, and the functions of *digestion* and *blood-making* are rendered vicious, and the blood therefore *impure* and unfit to nourish the body in a healthy manner, the douche, by powerfully rousing the flagging nerves in question, and thus causing improved circulation and digestion, is essential; in conjunction, however, with other appropriate parts of the water-treatment.

Such is a very brief outline of the conditions of body which require, or are opposed to, the employment of this powerful agent of the water cure. Circumstances of the pulse, the nervous energy, and of the skin, may and do, from time to time, arise in the course of a general malady, which call upon the practitioner to use the douche for a few days and then stop; but it is impossible to detail those circumstances in any book, however extended; medical precision and tact, combined with experience, alone can appreciate them.

The *local* application of the douche also requires consideration. The particular phase of the disorder in the part should be ascertained, and the quantity of douching well adapted; otherwise the chances are, that an inflammation almost extinct may be roused into activity. I have seen this happen in the knee of one of those clever persons who fancy that, because the remedy is plain water, and is not written in Latin, every one is a good judge of its application; he vigorously douched a joint from which all pain and swelling had gone, and in which stiffness only remained; the inflammation, pain, and swelling reappeared, and he was ill with it for many weeks. Moreover, the douche is a part of an entire treatment, and cannot be applied locally with benefit unless the viscera have been reduced in their irritation; all the douching in the world will not cure a chronically-diseased elbow or shoulder, if the stomach and liver secrete morbidly. The ordinary rule is, to apply it on the back and spine for a given time, so as to affect the whole body, and then to use it for a period to any part of the body which may require it.

§ 9. THE SWEATING PROCESS.

In this process, the excitation of the whole nervous system, and of the circulation, is produced by accumulated *heat* applied to the surface; and although in this it differs from the douche, which excites by the incessant application of *cold*, the result upon the functions in question is pretty nearly the same. The douche, however, implies the greater amount of visceral energy, since the excitement is a re-action on the immense and rapid withdrawal of heat from the surface, and on the *indirect* stimulus thus afforded; but in the sweating process, the *direct* stimulus of heat is applied to that surface, excites and irritates the nerves of the skin, that excitement and irritation are conveyed by sympathy to the brain and viscera, and both then labour to drive blood towards the skin sufficient to force and supply a copious perspiration. By virtue of this exciting action, the sweating process is rightly esteemed one of the most effectual means of rousing *torpid* and *obstructed* viscera into activity, by throwing an immense amount of irritation on the exterior surface, and thus leaving their function in better state to be enacted. Hence it is especially useful in the *turgid and congested conditions of the liver*, whether those induce *indigestion* with jaundiced skin, or *gout*, or *rheumatism*, or *dropsy;* in all these it acts by rousing the circulation, calling a great amount of blood and excitement to the surface, and thus producing derivation in favour of the obstructed viscus. How the relief of this diminishes the symptoms which constitute the diseases in question, will be seen under those particular heads.

Patients who come to try the water cure have generally been told by their previous medical advisers that "they may try the sweating process, but upon no account the wet-sheet packing." This has happened so often, that it has ceased to amuse or astonish me, by the ignorance of physiology displayed in it. The truth is, that if there be one process of the water cure more easily abused, and therefore more dangerous, than another, it is the sweating process. Compared with the wet-sheet packing, it is a hazardous remedy, for it excites and taxes the nervous and circulating systems in an extraordinary manner, whereas the wet sheet soothes them in an equally extraordinary manner; and I apprehend that the patients who require soothing are infinitely more numerous than those who can bear to be excited in the head and about the heart. Accordingly, the sweating is to be avoided whenever there is active irritation of the viscera or feverish symptoms of the skin, pulse, mouth, &c. Thus, it is improper in cold and influenza: it aggravates them, whilst the wet sheet is rapidly beneficial.

In most cases where there is a determination of blood to the head, or where there is reason to suspect the existence of chronic disease in the brain, the sweating must be practised with very great care and discrimination. Where there is extensive chronic inflammation in the digestive mucous membrane—in some cases of hypochondriasis, irritability of the heart, nervous debility, &c., this process must be deferred, or not used at all. Where these contra-indications do not exist, and the sweating still produces a loss of flesh, or an increased state of irritability—when the patient does not feel well, and obtain full reaction after the bath—in such cases it is advisable to discontinue it.

With the repetition of this process, great changes take place; at first, the perspiration is small in quantity, clear in its nature, and difficult to be produced; as the patient advances, it becomes more profuse, and impregnated with the most disagreeable odours—viscid and glutinous—of a dark yellow and even brown colour, and sour, fetid, &c., in its smell. When those morbid phenomena appear, the perspiration may be considered of a critical nature. As a general rule, where there is no evident reason why this process should not be used, sweating, followed by the cold bath, is *not* debilitating; what is lost in one way is repaired in another. The appetite is so much increased, and the functions of the skin and digestive organs so improved, that the loss of a little fluid by sweating has only a salutary effect. Fat is replaced by hard elastic flesh, and languor and debility give way to a state of cheerfulness and activity.

It is necessary to bear in mind, that it is not the mere pouring out of sweat that relieves or cures disease. What is desired to be done by the sweating process is, to rouse the system to those efforts of cure which constitute the peculiarity of treatment by the water cure. The sweat poured out is only an indication that these efforts have been made; in the same sense that the crisis is only an indication of similar efforts on a more continuous scale. Hence, if we find that the process taxes the patient's powers, and especially his head, it is proper, for the first time or two, to take him out of the blankets and use the bath, when a considerable heat has accumulated in the skin, and *before* any sweat has flowed. In this manner we are enabled to *coax*, as it were, the skin into sweating, without exciting the brain and nerves in a harmful way; for after a few trials of this kind, the skin opens and gives out its fluid, without any injurious straining of the system.

Another way to counteract the headache which sometimes attend sweating, is to place a towel, well wrung out of cold water, *over the stomach and bowels*, and then envelop the patient for the process. A brisk walk, or a light meal, taken two or three hours previously, ofttimes, too, curtails the process; but it is generally better to obtain the sweat without those aids; it is then more entirely the work of the system; there is less of *forcing* in it; it is more *natural*, and therefore more beneficial.

The usual water cure mode of inducing perspiration is by accumulated blankets tightly bound round the patient. I confess to have been strongly prejudiced in favour of this mode and against any other, from a belief that the general excitement of the system, as shown in quickened pulse, &c., and which it is so essential to produce, could only be roused by the gradual accumulation of the body's own heat in the coverings alluded to. I have subsequently had occasion to throw aside this prejudice, in consequence of having ascertained, by repeated experiments, that a hot-air bath (from which, however, the head is carefully excluded) causes all these phenomena of nervous and circulatory excitement in equal degree, the pulse, in both cases, rising from twenty to thirty beats in the minute, until the breaking out of perspiration. And not a small advantage of this air bath is, that it occupies from thirty to forty-five minutes, whilst the blanket-packing is a business of from three to five hours. Still, the head is taxed in both ; and it is therefore sometimes advisable, as already stated, to begin by simply heating the patient in blankets, and by degrees advancing to the full perspiration. Where it is desirable to actually *purge* the skin, as in *chalky gout*, in old *rheumatism*, and sometimes in *dropsy*, the air bath has the decided advantage of causing and keeping up a more profuse sweat. On the other hand, when we only desire the sweat as an evidence of excitement, and the warmth of weather curtails the blanket process, it may be as well to employ it.

But this hot-air bath, with the exclusion of the head, is a very different thing from sweating, as has been done, in rooms heated to 150° of Fahrenheit, the patient *breathing* air at that degree of temperature.

The inhalation of hot and dry air is in every way deleterious. It carries off all the moisture that ought to lubricate the windpipe and air-passages of the lungs, and thus renders the mucous linings of those parts especially sensitive. Not only so, the immediate contact of the stimulating atmosphere with the sensitive lining of the air tubes was never intended by nature, and the mucus is poured out for protection from such contact. Accordingly, this hot dry air, by abstracting the moisture, tends to produce cough and sense of stricture about the chest. This was the leading objection to the use of Arnott's stove in chambers, as all may remember; and it was a very valid one.

But, further, it is in complete opposition to the principles of the water cure *to inhale* heated air at all. Rightly proceeding on the doctrine, that the blood is to be rendered healthy, so as to permit the body to work its own restoration, the admission of pure cool air into the lungs, for the purpose of oxygenizing that fluid, is above all essential. Now hot air, being rarefied, does not contain one-half the oxygen that cold air does, and the blood consequently loses just by one-half its vivifying and strengthening agency; the dark blood from the veins is not sufficiently changed by the air, and a blood unfit for the purposes of life is allowed to flow through the body, and especially in the brain, where it congests, and produces the tense headache that attends the inhalation of hot air. The consequence of all which infallibly is, that when rheumatism, and one or two other complaints, are *relieved* by this hot-air sweating (and they have been so relieved), their return may be relied upon; no *cure* has been effected, because the very first principle of cure—the formation of a healthy, rich blood, to enable the body to effect its own restoration—has been sinned against. It is one of the abuses of the water cure that ought to be deprecated by all who understand that cure and wish it success.

An essential sequence to the sweating process is a cold bath, either the shallow bath, or the plunge or douche. The object is to restore to the skin the tone which it has lost, for the time, by the direct application of heat, and by the excessive play of its function in sweating. The water should therefore always be cold; and for another reason. It is desirable to make an impression on the centres of the nervous system, in those maladies in which the sweating process is proper, and this is most effectually made by the impression of cold on the skin at the moment when it holds an immense amount of heat, and is ready to transmit quickly and precisely the stimulus of the cold; the brain, meanwhile, having been put into a position to receive and readily re-act upon any such impression on the extremities of the nerves of the skin. The result of the impression and re-action is an amount of light and exhilarating feeling, that cannot fail to act favourably upon the parent mischief, and is, at the same time, a symptom of its relief. In old standing *palsy*, I have employed the douche after the sweating with much benefit; it is much more effectual than the plunge baths, the action of which is not so striking as might be expected.

I will not stay to answer the very old and long-exploded objection to the application of cold water when the skin is damp with perspiration, procured in a *passive* state of the body. Old ladies of both sexes, who have never seen it employed, hold by the danger and destruction that attend it ; but their opinion may be profitably exchanged for that of persons who, like myself, see it done every day with no particle of danger, and with considerable benefit. The hot, comfortable blankets in which such old ladies rejoice require, as I have said, more care in administration than the cold bath which follows them.

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§ 10. FOOT AND HAND BATHS, AND MINOR ABLUTIONS AND FRICTIONS.

Whilst the preceding processes of the water-treatment have been mourned over as most dangerous, foot baths and hand baths have been ridiculed as most inert. Practical investigation, however, sets aside this objection ; one instance in which a cold foot bath has relieved a nervous headache or toothache, or in which it has warmed the feet, is worth a thousand assertions about the absurdity of such a remedy from ignorant experience. Besides, physiological facts are in favour of its power in acting sympathetically on the function of the brain and spinal cord, and, through them, on the viscera. The feet and hands, the soles and palms especially, contain an accumulation of animal nerves and of blood-vessels which is not equalled by any portion of the exterior of the body. This is necessary to them as the organs of touch and prehension, and of station and walking. In these characters a very large quantity of animal nervous matter is essential to them, in order to bind them by the closest sympathies with the great centres of thought and volition, so that their applications and movements may be accurately directed by the mind. Disease shows this close sympathy ; in nó part of the body does *pain* appear in more exquisite form than in the maladies of the feet and hands—witness *gout* and *whitlow*. *Lock-jaw*, an evidence of the most intense irritation of the brain and spinal cord, is more frequently induced by wounds of the feet and hands, particularly the former, than by those of any other part of the frame. The least ticklesome persons prove exceedingly so when the operation is performed on the soles of the feet and palms of the hands. When the brain is oppressed, and stupor has overcome it, to what part are stimulating remedies applied for the purpose of relieving its circulation, after all other applications have failed? To the congeries of animal nerves in the sole of the foot. When the brain is faint, where are reviving remedies more effectually applied? To the congeries of animal nerves in the palms of the hands.

These considerations are worth recalling, when the efficacy of foot and hand baths is in question. They aid the numberless facts which attest the power of those remedies in relieving a variety of nervous conditions—pain, lassitude, fidgets, &c.—which show an irregular or congested state of the circulation in the brain and spinal cord. But inasmuch as they remedy the circulation in those animal nervous centres, they also act upon the ganglionic nervous centre in the digestive organs; and it is found accordingly that flatulence, nausea, sinking, gnawing, and other morbid sensations about the stomach, are materially relieved by foot and hand baths. And with this double relief, freshness and alacrity are imparted to the frame generally. By this beneficial operation, they assist the more general means of the water cure, although themselves only palliative of particular symptoms. Yet how necessary is this subjection of smaller symptoms in the course of chronic disease! Sometimes they are *coups d'epingle*, which exasperate the leading malady into an incurable inveteracy.

The shock and friction of the feet and hands in these baths has, for a secondary result, the attraction and retention in those parts of a great quantity of blood, and, consequently, of increased temperature there. In fact, a *cold* foot bath of twelve or fifteen minutes, followed by a walk of half an hour, is the most certain way to warm the feet that can be devised; just as, *per contra*, the most certain way to insure *cold* feet is to soak them in *hot* water. The same applies to the hands. When the patient is in condition to take it, a walk is necessary to obtain the circulating re-action alluded to. When he is not, and the action of a foot bath is desirable, I usually order some mustard flour to be added to the cold water, and prolonged dry friction with rough towels or brushes to succeed the bath; this seldom fails to cause re-action and warmth. In either case, the warmth remains for several hours. Very frequently I have heard persons say they have not known cold feet since they began to take cold foot baths.

It is necessary to bear in mind that the water should not be deeper than the feet. The object is to gradually warm the water, and thus render the re-action gradual and permanent; and this would not happen with too large a quantity. A small quantity of snow rubbed upon a frost-bitten part will gradually restore it, when a large quantity of ice, or, on the other hand, boiling water, would annihilate vitality at once. It is preferable that the feet should be rubbed by an attendant, and not against each other, especially in nervous and debilitated persons, in whom the exertion would be likely to mar any good to be anticipated from the re-action.

Partial ablutions and frictions are beneficially employed on other parts of the body against individual symptoms. The *head-bath* is an instance: when the brain is wearied and the whole body fatigued, it is most reviving to keep the back of the head up to the ears in cold water for five or eight minutes. Beyond this I have not found, from this topical bath, any of the astounding results that have been attributed to it by some writers. Where there is the smallest tendency of blood to the head, it, at least, does as much harm by the strictly horizontal position it requires, as it can do good by the abstraction of heat from the scalp.

In local spasmodic pains continued friction with the hand and constantly renewed cold water is very effectual; a cloth frequently dipped in the water will do, but on the whole the hand is better—why, it may be hard to say. In this way I have put an end to sudden and severe *neuralgic pains* of the knees and shoulders; and even to bad *nervous headache*, by frictions on the nape of the neck. I have relieved a *spasmodic state of the urethra* by friction and ablution of the loins and downwards, where the nerves going to the urinary organs are given off by the spine.

In *relaxed sore throat*, relief will be found from pouring a stream of cold water on the nape of the neck, and letting it run over to the front of the throat, the patient holding his head over a basin. This should be continued for three or four minutes; wet friction should then be used for eight or ten minutes; and the whole process repeated twice or thrice a day.

§ 11. WATER DRINKING.

All the preceding details of the water cure effect a change in the nervous energy of the body, and in the *distribution* of its blood. We now come to those details which more immediately operate in changing the *quality* of the blood; and these are water drinking, food, air, and exercise.

I have already (page 351) given my reasons for repudiating the indiscriminate prescription of large water drinking in the cure of chronic disease. A great number of cases—of *nervousness*, for instance—depend on irregular distribution of blood alone. In such, large quantities of water are decidedly injurious—they augment the nervousness tenfold. In another set of cases—those with blood tending towards the head—they are decidedly dangerous. Again, when the patient has a very irritable pulse, and is constitutionally a person of vivid sensations, large water drinking is rarely admissible. From three to six tumblers daily are the limits in such instances as the above; and that should be taken in very divided quantities, a wine-glassful at a time being often as much as is good. In all these cases, as well as in some of the worst instances of nervous indigestion, the great centre of the nutritive nerves is so exquisitely sensitive, that the shock of even half a tumbler of cold water upon the stomach is transmitted to the brain, and there causes giddiness, confusion, nervous aching, &c., and this the more certainly the lower the temperature of the water. On this account, I have now and then raised the water to 55° or 58°, when the drinking of it was indispensable, until the nerves of the stomach became more able to bear the natural temperature; and have been consoled for the heresy therein implied by the benefit therefrom obtained. For, as the external remedies derive from the interior to the exterior of the body, the stomach becomes less sensitive, and both the temperature and the dose may be carefully increased. This stimulating property of cold water taken internally should always be kept in mind. Most of those who know nothing, but assert a great deal, about the water cure, say that water drinking lowers the powers of the body, whilst many professors of the water cure order such extravagant doses of it as to make one think they consider it a very weak agent. Both err in not recognizing the stimulating character alluded to, and which requires due apportionment to individual cases. The cold of the water stimulates the blood-vessels of the mucous membrane, and expels the blood from them. For this reason it is that it is necessary to drink some water after every bath, this last always causing a flow of blood, for the time, towards the internal membranes, to remedy which cold water is drunk, and exercise taken immediately. Indeed, without these precautions, the external processes would fail in half their good effect, or be positively harmful. But if the blood-vessels of the mucous membrane are excessively irritable, this stimulation by the cold may cause violent reaction in them, and thus actually *increase* the quantity of blood in them. Here, then, is a reason for care in the quantity of cold conveyed by the water to the stomach. Further, the cold of the water stimulates the extremities of the nerves which come from the brain and spinal cord to the muscular coat of the stomach, and convey sensations to and from those parts. The result of this stimulation is contraction of the muscular coat, and *this contraction constitutes hunger*, one of the well-known consequences of cold water drinking. But here, again, if *too much* cold be applied, this contraction will amount to *spasm* of the stomach—an event I have witnessed in not a few instances of persons who treated themselves by certain water-cure treatises, which record the wonderful effects of wonderful imbibitions of cold water.

Added to the stimulus of *cold* is the stimulus of *weight*, which so heavy a liquid as water cannot fail to afford; and together with the weight, the *bulk* should be considered. It is true, that absorption of the water speedily takes place; but it is *more or less* speedily, according to individual peculiarities. Very many sufferers from nervousness and nervous indigestion will give marks of very slow absorption, by rejecting a portion of the water after an hour or more. Absorption is quickened by exercise; but if the patient be distressed by too large a quantity of water taken at once, exercise becomes a painful or impossible thing to him. Between the inordinate stimulation of cold and of weight, and of bulk, the stomach distresses, and almost paralyzes the brain and seat of the will; whereas, if taken in proper quantity, water is one of the most effectual sustainers of the animal nervous system and of locomotion: many persons, whom walking before breakfast would distress, are enabled to do so with comfort and alacrity by taking small draughts of cold water. Here, then, is another reason for discriminating in the prescription of water drinking.

Supposing the water absorbed and carried into the circulating blood, it then proves a stimulus to every capillary blood-vessel in the body. It thus quickens the great functions of nutrition, of deposit, and of waste, which are carried on in these minute and mysterious extremities of the wondrous circulating system. Quickening their office, it also quickens that of their great centre—the heart, and the pulse becomes more rapid with copious water drinking. But as a large proportion of the capillaries of the body exists in the brain and the spinal cord, their increased function in those organs proves a source of augmented nervous phenomena, the sensations becoming generally more vivid, and the processes of digestion, &c., going on in the viscera being felt, which the brain had previously failed to recognize. Some excitation of the nervous system is unquestionably unavoidable in the course of rousing the self-restorative power of the body; but the exposition I have briefly offered of the mode in which water drinking operates on the nervous and circulating systems, may warn persons, as yet uninformed of the science of the water cure, from the folly and hazard of prescribing or taking the huge doses of water which were at first thought and taught to be essential in *all* cases of disease.

Still, as I have all along repeated, there *are* cases of *torpid*, *obstructed function*, in which it is both safe and necessary to prescribe copious water drinking. In these, nothing short of considerable stimulation of the nervous and circulating systems by the cold, the bulk, and the action in the capillaries implied by the water, suffices to bring into play the conservative power of the body. But there is nothing to fear for the head or heart in such cases; the functions of both are far too much oppressed to be suddenly driven to the other extreme. Yet in no case is it desirable to swallow the twenty or thirty tumblers before breakfast, which, we are told, are so delightful and refreshing. It is to be hoped they were tumblers of short measure.

From what precedes, it is plain that water should be drunk in that state of the stomach which best fits it to receive and to transmit its stimulus, as well as to absorb it most readily. If the stomach does all these readily, a smaller quantity of water produces an equal result with a larger quantity in a less favourable condition of stomach. When the stomach is empty, and has been so for several hours, its nervous as well as its absorbent energy has accumulated, and the water stimulates, and is absorbed with alacrity. When the brain has been at rest for several hours, it and the whole nervous system are in the best state for receiving stimulation from the stomach. Accordingly, these conditions obtaining in both organs in the early morning, after sleep, and before breakfast—that time is best fitted for water drinking—the principal portion of which should, therefore, be practised then. In other parts of the day, for a like reason, water should be taken three or four hours after meals, and immediately after every bath or process whatever. Exercise of some sort should follow the drinking, in order to promote absorption. If very much heated with exercise, the water should be drunk very slowly. In most cases of *mucous indigestion*, a tumbler of very cold water, taken in sips an hour and a half after a meal, or even earlier, assists the stomach, heated and jaded by the process of digestion, in its laborious function; this is the only exception that I am aware of, to the rule of drinking with the stomach empty.

The rubbish which is talked about water drinking causing dropsy, thin blood, weak stomach, &c., is disposed of in the Appendix.

§ 12. AIR AND EXERCISE.

As in the preceding article, so in this, I am compelled to animadvert on the indiscriminate rule, or rather no rule, that has been imported into this country. Of air, indeed, it may be said, that an invalid cannot have too much, provided it be of the right temperature and hygrometric quality; seated or exercising, let him take as much as he pleases. But this is not the climate for such happy combination of atmospheric qualities; and to thrust all patients alike into all winds that may blow is heroic, but may prove hurtful to some of them. Still, anything like "coddling" should be avoided; patients should have abundance of air, and it is only necessary to regulate well the outgoings of asthmatic, pulmonary, and certain neuropathic persons, who should especially avoid east and south-east winds and night air. The morning air, like the morning sun, is the finest in its operation on the nervous system, and that system is then in the best position, after sleep, to receive its influence. The walk before breakfast is, therefore, the most requisite of any in the day. The air of towns is inimical to the cure of chronic disorders, except some rare instances of that protean disease, *asthma*. That of hills is the best, because the most dry, and the most stimulating; and it thereby effects the greatest changes in the blood. Low situations, and even high situations with a clayey, retentive soil, mar very much the curative process.

The air of rooms in which patients under the water cure sit, should never, even in winter, exceed 55° or 58°; and even lower is desirable. That of their bed-rooms should be ten or fifteen degrees lower, and, indeed, can scarcely be too cold. When the body is warm with bed-clothes, air at 35° or 38°, is much more conducive to sleep than that at 65° or 70°, to which temperature some persons raise the atmosphere of their bed-rooms. Everybody (especially the excitable neuropathic) sleeps better in winter than in summer.

With regard to *exercise*, it must be regulated entirely by the state of the patient's nervous system, and by the food he takes and digests. If there be none of that nervousness which begets tremulousness of mind and body, and if the stomach allows of the digestion of a fair quantity of meat and other nutritious articles, the patient ought to walk a good deal, in order to dissipate the nervous energy and the aliment. To tell persons to live low, and take constant exercise, or, on the contrary, to feed them highly, and keep them on the sofa, with the view of strengthening them (as I have known to be attempted), is an absurdity of which one would imagine an educated physician incapable, did we not hear sometimes of the injunction to "walk, walk, walk," being laid indiscriminately upon all patients alike. Only consider what parts are drawn upon in the act of walking. You bring into play the seat of the will, the brain, and spinal cord; examine, therefore, what is the condition of those parts, whether it be one of irritation and excessive function, or of oppression and deficient function; if the former, you most unquestionably increase the irritation by exercise of the will in long walking, just as you would inflame your eyes by prolonged use of them; if the latter, you do right to urge the will into action, in order to overcome the oppression. But when you excite the brain and spinal cord by walking, you excite, by sympathy, the great organic centre at the digestive organs; so that it behoves to consider the state of those organs, whether it be one of irritation and excessive function, or of oppression and deficient function. Now, it so happens that these conditions of the digestive organs correspond with similar states of the brain and spinal cord, and that, therefore, the same rule, as regards exercise, applies. Thus, in nervous indigestion, it is not well to take long walks, or great exertion, for stomach and brain are acutely sensitive; whilst in congested liver torpor pervades both it and the seat of the will, which should therefore be exerted in a strong and prolonged manner. Not only so; exercise wastes the blood and the nervous energy of the frame, and whence is a fresh supply to come? From the food which the stomach is to digest. But if the stomach *cannot* digest much food? Why, then you must not waste that which the food and blood supply more quickly than they can renew it. And this brings me to the proposition with which I started, that the amount of exercise must be regulated by the nervous energy, and the quantity of food taken and digested. I know it is proposed, and in some places acted upon, to walk incessantly, and to employ an immense quantity of the roughest portion of the water cure, in all cases. Very possibly this succeeds; but I know it cannot succeed without a vast amount of disagreeables to be borne by the patient; and I also know that cure is obtained with a regulated amount of those means, and free from a greater part of the disagreeables.

With this rule regarding exercise, the practitioner will determine whether walking, riding, or driving, be the appropriate form of it, and the amount of each. In the Second Part, I have stated the details of this matter in each malady treated of. It is only necessary to add here, that in all cases where the patient's limbs are in condition to walk at all, more or less of *that* exercise should be taken after each bath; or failing the capability of walking, artificial exercise, in the shape of considerable friction of the limbs, should be practised

§ 13. DIET.

Some writers on the water cure have made a boast, that no restrictions in diet are required in that mode of treatment. There can be no doubt that, in the water cure, the appetite and digestive powers augment so rapidly, that at an early stage of the treatment food can be taken more freely than in other plans of treatment; all the appliances have that tendency. But, on the other hand, experience gives me no room to doubt that, by appropriate regulation of the diet to each case, restoration is secured in much less time, and with much less of that constitutional tumult which harsh practice rouses. Accordingly, I have to forbid some patients the use of animal food three or four days in the week, and others for a week together; to some I forbid all puddings, even farinaceous, after meat; to others, all vegetable matter but bread, &c. All this is subject for weekly or even daily change; and it is impossible to lay down rules applicable to all cases. Two facts I have particularly noticed, that in some instances of digestive disorder the stomach tolerates best stimulating food, which contains a good quantity of nutriment in a small bulk—such as meat, bread, beans; and that in other instances it is advisable to avoid food of concentrated stimulus, and take that which contains smaller amount of nutriment in a larger bulk, as is the case with vegetable matters. As a general fact, it may be said that *nervous* disorder of the digestive organs is less tolerant of bulk than *inflammatory* disorder; nothing oppresses a nervous dyspeptic so much as a mass of vegetable matter; whilst animal food put into an inflamed stomach, causes local pain, and exquisite restlessness and distress generally. The practitioner, therefore, has to determine the particular state of the digestive organs, and then choose between nutriment in a small space, which stimulates by its concentration, and nutriment spread over a large mass, which stimulates by its bulk. Again, as to *quantity*, he must be especially careful on this head, as on it depends the amount of exercise and of water processes. Here, again, it is idle to attempt a general recommendation, except it be that it is safer to be under than over the mark. In no part of the physician's office is more acuteness, firmness, and precision required than in the affair of diet. Persons who would shrink from the utterance of an untruth in all other things, do not scruple to evade and deceive in this; as conscious of the extremity of mental feebleness displayed in the incapability of resisting the desire which babies and brutes gratify without control. When in good health and strong exercise of body, it matters little as to the kind of food which man takes, nor is it desirable to starve; that would place him in the worst condition for resisting the causes of disease; but there is *some* truth in the lines—

> "Gross riot treasures up a wealthy fund
> Of plagues, but more immediate ills
> Attend the lean extreme."

But when the "plagues" have arrived, it behoves to act upon the rule of giving the stomach—the centre and sustainer of all plagues—as little to do as possible, compatibly with the support of the body and with the amount of its exertions, and thus afford it the best chance of *recovering itself;* which, as I have all along said, is the only recovery worth obtaining. This rule, then, excludes all things that minister rather to the palate than to the body's support; but there are a great many good things among those which a patient in the water cure, and who eats only for the sustenance of his organs, may take. To show this, I append a list of *lawful* articles of diet, and I maintain that it ought to suffice for all except those to whom "*in solo vivendi causa palato est*," who live but to eat, instead of eating to live. But lest things not mentioned should be construed into lawful, I subjoin a list of articles which are *unlawful.*

DIET TABLE FOR PATIENTS UNDER WATER TREATMENT.

1. THINGS PERMITTED.

SOUPS.—Plain beef, mutton, or chicken broth, or with the addition of carrots, young peas, cauliflower, rice, vermicelli, semoule, sago, pearl barley, or other farinaceous substances, but without other condiments than salt. *These to be taken only under peculiar circumstances of sickness.*

Fish.—Turbot, soles, cod, haddock, whiting, mullet, trout, pike, and perch, simply boiled, and eaten with a little plain butter, may be taken *occasionally.*

Meat and Animal Products.—Beef, mutton, *lean* pork, veal, venison, roebuck, hares, fowls, turkeys, pheasants, partridges, woodcocks, but not the trail, and, indeed, game of all sorts when not too old, nor too long kept; the meat may be roasted, broiled, or stewed in its own gravy, with a few carrots, turnips, or potatoes; further, good fresh butter, mild and tender cheese occasionally, and fresh curds.

Vegetables and Roots.—Asparagus, artichokes, spinach, cauliflower, young cabbage, sea-kale, French beans, young peas, tender beans (but not the skins), carrots, mild turnips, parsnips, beet-root, potatoes, rice, macaroni, with gravy or milk, but without cheese.

Condiments.—The only condiments are salt, sugar, vinegar, and lemon juice. The two latter, with young meats, chicken, and fish only.

Sweets and Fruits.—Plain puddings of milk with eggs, flour, bread, rice, vermicelli, macaroni, semoule, sago, arrow-root, or other farinaceous substances, eaten with butter, or sugar, or the fruit of pies or puddings; to some, ices; further, well ripened pears, grapes, raspberries, gooseberries, strawberries, oranges, and even apricots, peaches and nectarines occasionally, remembering always to reject the skin and fibrous parts.

Drinks.—Water, toast and water, barley or rice water, and sometimes milk, milk and water, weak black tea, almost cold.

2. THINGS PROHIBITED.

Soups.—Soups of all kinds, unless made expressly for the patient, under peculiar circumstances of sickness.

Fish.—Eels, salmon, salmon-trout, mackerel, herrings, sprats, and white-bait—all sorts of salted, pickled, smoked, or potted fish—turtle, oysters, lobsters, crabs, crawfish, prawns, and every kind of shell-fish.

Meat and Animal Products.—Ducks, geese, and the flesh of very young animals generally—meat or game pies and puddings—all pickled, salted, smoked, or potted meat, forcemeat, and sausages of all descriptions—butter not perfectly fresh and good, strong or decayed cheese, eggs, and honey.

VEGETABLES AND ROOTS.—Succory, lettuces of all kinds, water-cress, mustard and cress, sorrel, celery, radishes, cucumbers, leeks, onions, mushrooms, and truffles.

CONDIMENTS.—Mustard, pepper, cayenne, ginger, nutmeg, mace, cinnamon, cloves, allspice, caraway seeds, saffron, lemon and orange peel, laurel and bay leaves, bitter almonds, orange-flower water, mint, thyme, sage, parsley, fennel, horseradish, shalots, and indeed every species of spice—all fish and game sauces, catsup, pickles, and other similar compounds.

SWEETS AND FRUITS.—Rich pastry and dumplings in general—all puddings, creams, preserves, jellies, comfitures, marmalades, all fruits not perfectly sweet and ripe, and in general all stone fruits, melons, apples, currants, nuts, walnuts, filberts, and almonds.

DRINKS.—Wines, spirits, and liquors of every kind—so also negus, punch, bishop, and similar compounds—porter, ale, beer, spruce, or ginger-beer, soda-water, seltzer or other mineral waters, all effervescing draughts prepared from powders, lemonade, or other acid beverages—coffee, green tea, strong black tea, aromatized chocolate, and buttermilk.

Still, it must be repeated, that all tables of diet are general, and that the judicious and attentive practitioner must prescribe a diet for each patient. These are a few suggestions, however, which, not referring to articles of food only, apply to all who are undergoing the water treatment :—

1. Eat slowly, and chew your food well; otherwise you leave the stomach to do the duty of the teeth as well as its own, besides failing to mix a sufficient quantity of saliva with the food, which plays an important part in digestion.

2. Drink no *hot* liquids; *tepid* are the next best; and *cold* the best of all; in fact, unless on special occasions, all liquids to be drunk should be cold.

3. The less you drink of anything at meals the better; not because the liquid dilutes the gastric juice, as some have said, but because it gives a stimulus to the secretory vessels of the stomach, different from that of the dry aliment which is the right stimulus, and the consequence is likely to be the secretion of an improper gastric juice.

4. After eating, let as little excitement as may be proceed

from the brain and spinal cord to the stomach, as it may interfere with digestion. Therefore, remain seated, if in the air, the better; or if you move, let it be slowly. For the same reason, avoid all subjects which are a strain upon the mind; take the thoughts of others in books of easy reading, rather than exert your own.

5. Let five and a half or six hours intervene between the three meals of the day; and let the last be a scanty one. Two hours and a half at least should elapse between the evening meal and bed-time. And the same time, at least after any meal, before any water cure process is practised, except foot-baths, which may be taken as soon as you please. Sweating may be practised an hour after a meal.

6. Avoid fruits at all times, except before or at breakfast. Dessert of any kind is inadmissible. It is better to avoid tea altogether, but if it be taken, it is safer at breakfast than in the evening, the day being before you; whereas it might make the night wakeful.

7. About two hours after a meal, especially dinner, the stomach being heated and jaded with digestion, is pleasingly stimulated by a small tumbler of very cold water taken in sips, as you would take wine. It gives a fillip to the muscular coats of the stomach, which then contract, and expel any air that is disturbing that organ.

Wine and all alcoholic liquors are among the forbidden things in the table. For a man who has appetite enough to eat a dinner of fish, flesh, fowl, and sweets, to add to these stimulants that of four or five glasses of wine, day after day, is one of the most preposterous conventionalities that social extravagance ever invented. And yet to see the *solemn* regularity with which it is done, one might fancy it was an act of superlative wisdom, instead of the state routine of an absurd and injurious custom. Put it in this way; either the stomach has appetite, and does not require the stimulus of alcohol to make it digest, or it has not appetite, and should not have food put into it to digest. Where, then, is the *necessity* for the daily wine-bibbing? Besides, the stomach will only bear a certain amount of stimulation, and if it receives it from the wine, it is unable to receive it from food also; so that the digestion of the latter is materially interfered with by the former, and the appetite for the stimulus of aliment diminished in proportion as that of alcohol is applied. But it is an old tale to repeat the numerous arguments against a foolish custom, for which there is but one argument—that it *is* a custom. Of one thing I am convinced, that it is less injurious to drink a bottle of wine once a week, and be sick after it, than to keep up a slow, smouldering irritation of the stomach, by two glasses of the same wine taken with stupid precision every day, "when the cloth is removed."

If such is my creed regarding vinous liquors for those who are in apparent health, the reasons for avoiding it in those whose viscera are a focus of irritation, as in chronic disease, will be potent, and need not be detailed. I would not let the opportunity pass of expressing my belief in the infinitely superior wisdom of abstinence from alcoholic liquids under ordinary circumstances of health and disease. But were the case one of extreme exhaustion from loss of blood, or any other depletory cause, or from excessive hysteria, I should not hesitate to administer any wine or spirit that was nearest; they are, strictly speaking, medicinal means of ready application, and, as such, may be wisely employed in time and place; but healthy men, and men with chronic disease, do not require medicinal means every day after dinner. Yet there are men silly enough not only to take a nauseous pill of drugs *before* dinner, but this more pleasant, but equally deleterious draught of physic *after* dinner! Strange infatuation!

§ 14. CLOTHING.

Throughout this work it has been shown that the essential of all chronic disease is excess of blood in the internal organs, to the detriment of the circulatory activity of the exterior of the body, of the skin especially. On this fact the whole treatment described in the preceding pages is based, and it renders the clothing of the body a thing of some importance. It is an aim to bring to, and fix in the skin, a quantity of blood which shall both diminish the excess within, and render the skin more able to re-act upon external agencies, cold, damp, electricity, &c. Now this is not to be done by concentration of heat about the skin: the more you exist in a hot atmosphere, or in a mass of fleecy hosiery, washed leather and triple coats, the less able does the skin become to re-act upon cold, and the more, therefore, does that cold tend to drive the blood from the exterior to the interior, and increase the congestion of blood there. It is said that all this excessive clothing is to keep out the cold; but, in this most unsteady of climates, at least, the thermometer varies from 5° to 20° in a day, and can it be said that the same amount of clothing is necessary in both temperatures? On the contrary, the very excess of covering at the higher temperature renders the skin exquisitely sensitive to lower temperature, which comes on, very frequently, in half an hour; if the clothing is only enough at 60°, what is it at 45°? or if it be just enough at 45°, how excessive and enfeebling it must be at 60°! To keep the skin in active warmth by a quantity of under clothing, is a most fallacious and injurious attempt.

But further, a considerable amount of the waste of the body is effected by the skin, and such waste cannot go on without free contact with the atmospheric air; contact which is materially prevented by the mass of garments alluded to. The consequence is, that materials are retained in the circulating blood which ought to be expended at the skin, and, by their retention, prove a source of disorder to the organs in general. For such waste and elimination the presence of blood *in* the skin is necessary, as well as that of air *upon* it; and it is therefore essential, on this score also, to *fix* blood there.

Lastly, we have to consider the enormous number of nerves, having their centre in the brain and spinal cord, which are spread over the skin, and convey sensations thence to the brain. When the skin is imperfectly supplied with blood, and not re-active, all changes tell painfully upon these nerves, and in that manner keep the brain in irritation from that source. Now, a *steady* state of the cutaneous nerves cannot be obtained without insuring a good and *fixed* supply of blood to the skin.

On every score, then, it is desirable to avoid all clothing which shall have for view to keep the body in a state of artificial heat. The skin should be made *independent* in this respect; its warmth should be the result of the chemical changes actively going on in its actively circulating blood-vessels; and its nerves should be able to throw off, by the reaction of the circulation, those sources of irritation which its subjection to them proves so disordering to the brain and spinal cord. In speaking of the wet-sheet packing, I have endeavoured to show how it quiets the brain, by withdrawing the skin from all irritating sources.

From all this it may be inferred, that exposure of the skin to the free access of air is an essential part of the water cure, and that therefore the application of much warm under-garments is not to be practised. But here, again, reservation must be made regarding the organic capabilities of each patient. What is excess of clothing to one may not be so to another; and to withdraw the flannel jackets of every one who begins the treatment, simply because he is a water-patient, is a blunder of routine which would materially thin the number of the practitioner's successful cases. Look at the number of patients who have not blood enough to supply the exterior, as well as the interior of the frame; in such, you *cannot* bring the blood to the surface until you have *made* more of it: the attempt to do it by trusting to the re-action to be produced on the admission of air to the bloodless skin, is enough to annihilate some of those fragile individuals. Look also at the numbers of patients who, although they have blood enough, have it centered in the chronic irritation of the interior, and who, besides, have had the skin hermetically sealed by flannel, or silk, or leather, for twenty or thirty years. To strip them of those coverings simultaneously with the commencement of the water-treatment, is a rashness that would be punished by the exasperation of the internal irritation into active and dangerous inflammation. Accordingly, I make it a practice in similar cases not to interfere with the clothing until the appliances of the water cure have wrought such change in the body's organic state as to render *certain* the power of the skin to generate its own sufficient warmth without the necessity for retaining it by a quantity of under-clothing. This period varies in individuals, and I frequently allow several weeks to pass before attempting a change. It must always be remembered, that a *prolonged* feeling of physical misery, such as the abstraction of warm clothing is apt to beget, is a state of malaise to the brain, which therefore re-acts unfavourably on the rest of the body; and I hold that a patient who suffers so much in that way, derives as much injury from the miserable feeling as he can possibly derive good from the free access of air to the skin. You must *fill* the skin before you give it incressed work to do.

Again: when you do begin to withdraw clothing, it is well to do so piecemeal, especially in such cases as I have indicated. In a climate like that of England, with its varying barometer and thermometer, it appears to me more reasonable, if additional clothing be necessary, to heap it in the shape of *outer* garments, which may be donned and doffed with the vicissitudes of the atmosphere. In withdrawing the under-clothing from delicate patients, it is often well to substitute some outer covering when the temperature requires it, at evening or early morning, until the skin is wholly able to support itself.

When, however, a full-blooded patient presents himself for treatment, with, it may be, apoplectic fulness of the head, active irritation of the liver, or some similarly conditioned malady, in which it is necessary to *reduce* the whole quantity of blood, as well as *re-distribute* it, I have no hesitation in withdrawing the flannel clothing at once and entirely. There is then no fear that the air will withdraw more heat from the surface than the interior can afford to renew; and we also advance the process of waste, by the skin, which, in such cases, it is desirable to obtain.

In any case, when once the withdrawal of extra clothing is judiciously effected, it aids materially the progress towards recovery; it is both an evidence of vast improvement, and ground for more and more rapidly-acquired improvement in the future; the reasons for which are to be found in the commencement of this article.

§ 15. HABITS OF LIFE.

When the nervous system of an individual has been long habituated to the application of certain stimulants, and to the impression of certain circumstances at certain periods of the day or hour, and when, with these, his health has gradually deteriorated, and become seriously compromised, the withdrawal of these periodical stimulants, and the alteration of these periodical circumstances, become an essential part of a plan of medical treatment which is professedly hygienic. As in the medicinal plan of treatment, the vulgar and half-educated practitioners alone put their whole trust in the drugs that are prescribed; so in the water-treatment, he has a very narrow and vulgar idea of it who thinks that the recovery is effected by the bathing and water drinking alone, and leaves untouched the habits of the patient. It is not the mind alone that is the creature of habit, but every sentient twig of a nerve, and every irritable capillary blood-vessel of every tissue of the frame. Let a man who has hitherto lain in bed until 8 A.M. be roused at 6 A.M.; it is not his brain only that is afflicted by the change, but his appetite for breakfast is altered—he is thirsty, feverish, shivering; his aptitude for his avocation is diminished, it is more laborious to him; as a consequence, he cannot eat his dinner so well, and so on through the day, and perhaps several days of disagreeable revolution. The altered impression on the animal brain has told upon the organic centre at the stomach, and thence has changed the organic action of the whole frame. Gradually, however, both animal and organic systems of nerves accustom themselves to the new order of things, to the impression of light, sound, locomotion, &c., between the hours of 6 and 8 A.M.; and inasmuch as it is more in accordance with the wishes of Nature, as exhibited in the human body, that sleep should not be prolonged far into daylight, this new arrangement of time for rising eventually proves a wholesome, although at first an unpleasant one. In this, as in the *remedial* treatment of disease, we are obliged to refer to Nature, and make all our art consist in repeating her dictates, and imitating her staring facts. For, look at the man who lives most closely according to her promptings; he goes to bed early, because he is tired; he gets up early, because his brain will not sleep any longer; he works because his own hunger, and that of others dependent on him, urge him; he eats, because he is keenly hungry; and last, not least, his stomach digests well, and his brain sleeps soundly, because the cares, scramblings, envy, and slander of conventional society are not his. He lives, as nearly as can be done in a country calling itself civilized, after the manner of Nature, and he gets his reward in the riches of health.

Now, the sufferer from chronic disease who strives to rid himself of it by the means of the water cure, must condescend more or less to the *natural* habits of life. He must learn to rise early, and to walk or work so as to gain appetite; when this appetite is acquired, he must eat, whether the hour be fashionable or not; and he must go to bed early from the motive of fatigue alone. And he *will* do all this in a very short time, and find pleasure in it, and look back on the former habits as on a fevered dream. Let any one measure the time it took to fall into the bad habits, and he will find that it takes a much shorter time to fall into the new and good ones. And this process is expedited by the various details of the water cure which have been passed in review; each one, when properly applied, adding to the alacrity, impressibility, and reactive energy of the nervous systems, in which and by which habits are formed and changed. Allusion has been already made to the facility with which water patients abandon, not by degrees, but immediately, the stimulus of wine, without experiencing any disagreeable want. The same applies to previous habits of all kinds. They are to the invalid a sort of stimulus, a stimulus which his nervous system expected and responded to at certain times, and flagged or fidgeted if they were not applied at those times. The man who has been in the habit of dining at 7 P.M., with all the forms, strong lights, liveried servants, two or three courses (though he, perhaps, only ate of one), and one or many guests, discovers, when he is deprived of them, that all these accompaniments of eating were actual stimulants to his nervous system, and that he cannot eat without them; one course the fewer, the absence of a guest, or even wearing a morning instead of an evening dress, makes all the difference in the happiness and appetite of this creature of habit. From such wretched slavery as this, he may be emancipated almost immediately by the applications of the water cure, and with little or no suffering to the nervous system. For a few days he will feel a little queer, as if "somehow there was something somewhere wanting;" but the withdrawal of internal irritations, and the stimulation of water applied to the extremities of his nerves, and conveyed to their centres, very shortly afford to the latter a sustaining action, which fully compensates for that which the previous injurious habits had supplied.

In this manner, the water cure becomes a means of eradicating unwholesome, and of planting healthful habits in those who submit themselves to it. Nor is this confined to the body. How frequently have I seen persons, who were dying of ennui in the midst of the stimulating gaieties of London, find the day all but too short in this quiet village of Malvern! I have seen men, whose jaded and morbid mind could previously take no nutriment save the garbage of English and French novels, devour the strong meat of History and Biography with keen and large appetite. And I constantly remind my patients that the treatment is renovating their minds as well as bodies, ridding them of the silly wants and unmeaning necessities which were in part the cause, in part the effect, of their physical disorder. Doubtlessly much of this is owing to the removal of that disorder, which takes the weight off the mental function. But in all chronic disease, there is more or less loss of volition, which can only be roused by the *necessity* for acquiring some good habit; therefore, although it were not *directly* essential to the body's health to impose certain rules of life which require exertion of the will, inasmuch as they differ from previous habits, it is well to insist upon them, for the sake of their *indirect* operation on the nervous system of the body; I am convinced that the mere necessity of undergoing some process three or four times a day, aids those processes in bringing about the general result of health. And so far from this derogating from the credit due to the *water* cure, I think it rather exhibits the philosophical character of that treatment which thus acts on mind and body simultaneously.

With this general view of the operation of habits of life, and of the necessity of altering them, under the *régime* of the water cure, it is unnecessary to enter into extended details; and I shall only schedule a few of the more important habits to be dropped and to be adopted.

Early rising should be practised—the sun, the air, the exercise, and the water drinking, are all more beneficial then, than at any other part of the day. No water patient should be in bed after 6 A.M.

The longer the patient is in bed before midnight the better, due time being allowed since the last previous meal. Physiological experiments countenance the old saying, that "an hour's sleep before twelve o'clock is worth two after it."

He should learn to sleep on a hard bed; for excessive heat excites the nerves of the skin, and these convey the excitement to the brain, which thus becomes dreamy or restless. Six hours' sleep is enough for excitable persons; phlegmatic and impassible persons require seven or eight hours. If you have had either of these quantities, resist further sleep; the second sleep is seldom refreshing, and rather disturbing to the brain.

Avoid hot rooms, easy chairs, and lolling on sofas; all these take from the energy and the volition of the nervous system.

In order to keep the nervous system in wholesome play, let all the day be accurately divided by baths, packings, walkings, readings, &c., and let each division be rigidly adhered to, and made a point of honour. In short, make a business of the whole treatment; a business with a great aim at the end.

Avoid extensive correspondence by letters, especially with commiserating friends. It so happens, that most friends express themselves more anxious about your health than about their own; *pour faire valoir* which anxiety, they usually give you dismal pictures of your condition, and add warnings about the "dreadful water cure." Attend to the water cure, since you have undertaken it, and not to your friends.

Besides alcoholic stimulants, give up the scarcely less deleterious stimulus of *tobacco*, in the shape of *snuffing* and *smoking*. Both tell injuriously on the nerves of the stomach as well as on the brain. In the German water cure establishments the patients smoke; they also eat saurkrout and heavy pastry; and, it is said, they get well. Be it so; but, I repeat, business-worn Englishmen are not heavy Germans, and *could not safely bear the rough treatment* which the indulgence in these hurtful habits obliges, in order to overcome the malady. Nay, more; I defy any one to cure a *nervous* disorder or a shattered constitution, whilst the patient is allowed to snuff or smoke tobacco. I would have no patient who refused to give it up; the physician should control, not pander to his patient.

Other precepts regarding habits are suggested by individual cases, into which it is too long to enter in a volume. The above are of general application; and, for the rest, it suffices to state that all habits which *strain* the nervous system on the one hand, or allow it to *become torpid* from want of employment on the other, are to be avoided.

A few words on WATER CURE ESTABLISHMENTS will not inaptly finish what has preceded. There can be no doubt that certain advantages of regularity and ready inspection of patients attend the application of the water-treatment in these places. But in order to fulfil their proper aim, this regularity and inspection should be faithfully carried out. The doctor should be the master of his house, and should firmly resist the wishes and caprices of all who would run counter to the stringent rules of water-treatment. There is too much reason to believe that establishments are rendered attractive to patients by the amusement and the license that are permitted, and the object of keeping them for a long time by such means preferred to the legitimate object of cure. They who proceed on such grounds can scarcely be called professional men—they are hotel-keepers. Thus I know of an instance in which a variety of indigestible articles were daily served on the breakfast table of an establishment, because some self-important and vulgar patients had the taste to call the simple and wholesome fare "shabby." Besides, it is contradictory to forbid alcoholic drinks, which excite the brain, and allow tobacco, which does the same. What they call the *soothing* effect of smoking is the same condition which the old dram-drinker experiences when, after a restless state for the want of the old stimulus, he swallows it, his brain is sustained in its circulation, and he is *soothed*. These things, and others of a like kind, going on in water establishments, will eventually and deservedly bring them into disrepute. Few cures will be made, when the patient is allowed to regulate his own treatment and habits; and no one is so ready to publish the failure and run down the treatment as a patient who has been so mismanaged. He takes his own way, but leaves the responsibility with his doctor; and this is just, for the doctor is to blame who sacrifices his dignity to his cupidity. This thing needs much reform. A good rule for the public would be to suspect all those who advertise and puff their establishments, who put forth the amusements as baits for the fanciful invalid, and wonderful cures for the desperately diseased. In this matter there is but one legitimate mode of proceeding; let the physician *cure* patients—*they* will be his advertisements; let him publish his experience in a scientific form, and readers will then believe he *knows* what disease *is*; whereas the *ad captandum* and exaggerated stuff, thrust before the public as a medical exposition of the power of the water cure, is no more so than are MORRISON's propositions about disease, ending in the recommendation of his pills, a true account of that condition. Both the newspaper and the book advertisements are sheer quackery; and water cure establishments will thus become mere traps.

Again, it appears an arrangement of very doubtful propriety to place male and female patients in the same establishment. By means of the bath attendants (and the uneducated *will* babble) the infirmities of females are liable to become known to everybody with whom they sit at table; and I very much question whether this squares with our English notions of delicacy. Other disagreeables I have known to occur from this mingling of the sexes in the same house, which induces me to suggest that the treatment and lodgment of females should be altogether distinct from that of men. What would a parent or husband say to the presence of women of doubtful character in the same house with his wife or daughter? Moreover, a total absence of constraint is an essential part of the treatment, and the infirmities of English pride and stiffness are too apt to engender it where ladies are introduced. There happens a great deal of fine dressing and other superfluities of existence, which, were each sex—the men certainly—alone, would and ought to be dispensed with, by persons engaged in the attempt to recover health.

Until these circumstances are altered, water cure establishments are not very likely to answer the health-seeking aims of invalids, nor to advance, in public or professional favour, the admirable system of treatment which they profess to carry out. Sobriety and propriety are, in this country, rightly demanded by the *thinking* in matters of serious importance; and what can be more serious than the practical trial of a mode of remedying disease? Such trial ought not to be confided to those who require puffs, direct and indirect, to draw the *unthinking* into establishments where the means of lengthening their sojourn is far more a subject of consideration than their restoration to health. In due time, this system of hotel-keeping will fail with the public, and then all the benefit which is unquestionably derivable from treatment in a water cure establishment will have opportunity of being obtained, the physician compromising none of his professional dignity, and the patient being bound to the single object of regaining health.

It is an absurd error, however, to suppose that the water-treatment cannot be carried on as effectually out of a water cure establishment as in it. It has been related of some German water practitioner that, in answer to the question regarding the probable time required for a cure, he said,—"Two months, if with me; but if you lodge out of doors, when God pleases." Now this is the saying of a sordid charlatan, who sacrificed the truth to the desire of filling his house; the first part of the sentence appealed to the hopes, the second to the fears, of the patient—the stale trick of charlatanism; as if all persons did not recover in all places "when God pleases!" Patients *can*, and *do*, get well as certainly out of as in a water cure establishment; every day here, and in other places, certifies it. Nay, there are some patients who are *much better* out of the inevitable bustle of an establishment. Not unfrequently, I have found it necessary to advise patients *not* to come into my house, because I was assured that their nerves would not bear the noisy movements of more active and hardy patients; and it is not to be supposed that the majority should be silent for the minority in such a place of resort. In some cases of bad apoplectic or congestive fulness of the head, patients are better in their own quiet lodgings, reading, eating, and sleeping, without being disturbed by the conversation and the very early rising of the less sensitive many. Of heart disease, and some aggravated forms of hysteria, the same may be remarked.

APPENDIX.

I.

ANSWERS TO OBJECTIONS URGED AGAINST THE WATER-TREATMENT OF CHRONIC DISEASE.

[This Appendix contains the body of a work from my pen, entitled "The Dangers of the Water Cure," with only a few verbal alterations.]

THE accusations advanced against the water-treatment are first stated at the head of each section, and then answered. As most of them have been made by medical practitioners, generally of the apothecary kind, it is well to mark, that the chief refutation of them is drawn from authors who deservedly stand high in the estimation of the medical world, whether of the drug or water persuasion—authors whom mere apothecaries never read.

1. THE WATER-TREATMENT THINS THE BLOOD.

Such an effect of water drinking is not mentioned by any of the authors who have made the diseased conditions of the blood their study. Let the writings of HOFFMANN,[*] FRIEND,[†] SCHWENCKE,[‡] BEUCHNER,[§] HEWSON,[||] HEY,[¶]

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[*] De Sanguine et ejus Observatione. 4to. 1660.

[†] Emmenalogia, Opera omnia. London, fol. 1733.

[‡] Hæmatologia, sive Sanguinis Historia. 4to. 1743.

[§] De nimia Sanguinis Fluiditate et Morbis inde Oriundis. 4to. 1749.

[||] Experimental Inquiry into the Properties of the Blood. 8vo. 1771.

[¶] Observations on the blood. London, 1779.

GRUNER,[*] THACKRAH,[†] BELHOMME,[‡] SCHULTZ,[§] BILLINGERI,[||] STEVENS,[¶] and a host of others be consulted, and we defy the reader to find in any one of them the thinning of the blood attributed to dilution with water. These writers are most minute in their enumeration of the causes of the blood's deterioration, and some of them give precise accounts of their experiments on this head, but nowhere do we find water mentioned as an impoverisher of the vital fluid. On the other hand, we *do* find, from the experiments and observations of SCHWENCKE, FRIEND, COURTEN, PITCAIRNE, and THACKRAH, that the employment of those medicinal agents, the fixed and volatile alkalis (including the carbonates of potash, soda,[**] and ammonia, sal volatile, &c.) has a particular effect in attenuating the vital fluid, breaking up its coagulating power, and thus inducing a diminished vital cohesion of the various textures of the body formed from it. Further, we find from the experiments of LE CANU,[††] that another very favourite remedy of drug medication has the power of "thinning" the blood, by the removal of the rich red globules which give it colour. He found that a *first* bleeding furnished in 1000 parts of blood 792·897 of water, 70·210 of albumen, 9·163 soluble salts and animal extractive matters, and 127·73 of globules. But after a *third* bleeding, a few days afterwards, in the same patient (a female), the proportions were 834·053 of water, 71·111 of albumen, 7·329 of soluble salts and extractive matters, and 87·510 of globules—showing a diminution of 31 per cent. in the course of a few days, of that ingredient of the blood which chiefly constitutes its richness!

Again, what say medical authors of *mercury*—another favourite medicine and "sheet anchor"—and its agency on the blood? DIETRICH tells us, that soon after salivation has been established, the blood exhibits an inflammatory crust; at a later period *its colour deepens, and its coagulability is diminished; the proportion of clot, and therefore of fibrin, to serum (or watery part) becomes smaller; the formation of albumen and mucus sinks to that of serum; the whole organic formation of the patient is less consistent and cohesive.*[*] Another writer of weight says, in the most *naive* manner imaginable—"A full plethoric woman, of a purple-red complexion, consulted me for hæmorrhage from the stomach, depending on engorgement, without organic disease. *I gave her mercury, and, in six weeks, blanched her as white as a lily.*"[†] From all which it would appear that there are shorter and surer modes of "thinning the blood" than by water drinking.

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[*] De Pathologia Sanguinis. Jena, 1791.

[†] On the Properties of the Blood. 8vo. 1819.

[‡] Observations sur le Sang. 4to. Paris, 1823.

[§] Meckel's Archiv. für Anatomie und Physiologie, 1826, No. iv.

[||] Annali Universali di Medicina, April, 1827.

[¶] Paper read to the London College of Physicians, in May, 1830.

[**] HUXHAM says (*Essays on Fevers*, pp. 48 and 308), that alkalies induce a scorbutic cachexy; that is, a dissolution of the solid parts of the body.

[††] Nouvelles Recherches sur le Sang, in *Journal de Pharmacie*. September and October, 1831.

There is a diseased state denominated *Anæmia*, or Bloodlessness, in which the blood is deficient both in quantity and quality: a familiar and too common instance of which is the *green sickness* of girls. Now, in all the medical works on this disease, allusion is never once made to water drinking as a known cause—not even to the possibility of its being a cause of it. One would imagine that, in writing on so flagrant an example of "thin blood," this would scarcely be passed over were it so certain a cause, as it is *now* said to be, of the disease in question. Yet, for anything of the kind, it is vain to search the pages of BECKER,[‡] ALBERT,[§] JANSON,[||] CHOMEL,[¶] ROCHE,[**] or COMBE,[††] all of them authors of recognized ability and consequence. On the other hand, *bad, moist air, poor and insufficient food, exclusion from light, residence in hot rooms, and excessive secretions and evacuations* (purgatives and diuretics, to wit), are recited as the most common causes of the impoverished state of the blood alluded to. To these are to be added such as cause any disease of the digestive organs which, interfering with the proper digestion of the food, leads to the formation of blood deprived of the red globules. Nay, Dr. COPLAND says that general bloodlessness will not take place without some such disease. His words are :—

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[*] Op. supra cit. 80.

[†] Dr. Farre, as quoted in *Ferguson's Essays on the diseases of Women*, Part i. p. 216.

[‡] Diss. Resol. Casûs Pract. Anæmiæ. Leyden, 1663.

[§] Dissertatio de Anæmia, 732.

[||] De Morb. ex Defectu Liquidi Vitalis, 1748.

[¶] Dictionnaire de Méd. et Chirurg. Prac., tom. ii. Art. *Anémie.*

[**] Dictionn. de Méd., tom. ii. Art. *Anémie.*

[††] Transact. of Med. and Chirurg. Society of Edinburgh, vol. i.

"It is probable that general anæmia will not take place, unless *consecutively* of remarkable torpor of the vital influence, or of some morbid condition of one or more of the organs which contribute to the formation of the blood. Where the digestive powers and the functions of the liver are weakened, anæmia is not infrequent. I am disposed to view the liver as being equally, if not more, concerned in this function of blood-making than the lungs."

And again he says :—

"Deficiency of blood, as respects both its diminished quantity and its poor quality, or the defect of red globules, is often associated with visceral disease, of which it is generally the consequence." *

Further on he lays down, as "a grand pathological inference," the following :—

"The interruption or obstruction of any important secreting or eliminating function, if not compensated by the increased or modified action of some other organs, *vitiates the blood more or less ;* and if such vitiation be not soon removed, *by the restoration of the function primarily affected*, or by the increased exercise of an analogous function, more important changes are produced in the blood, if the energies of life are insufficient to expel the cause of disturbance, to oppose the progress of change, and to excite actions of a salutary tendency." †

Taking this sentence as a text, and having an eye to those which precede it, we shall take the liberty of preaching a little sound physiology to those who talk about "the thinning of the blood."

Of the patients who resort to Malvern for the treatment by water, air, exercise, and diet, seven out of ten labour under the interruption or obstruction of more or fewer of the organs which minister to the digestion of food ; and the periods of their ailments date variously from two to twenty years previously. During these long years they have run the gauntlet of all the means of drug medication, and however painful it may be to repeat the fact, *they tell us* that they are worse than when they began so to run.

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* Dictionary of Practical Medicine, p. 174, sect. 42, 44.

† Op. cit. p. 190, sect. 124.

During these years, too, the obstructed salivary glands, the obstructed liver, the obstructed bowels and kidneys, the interrupted or vitiated secretion of gastric juice, and the general disorder of the digestive mucous membrane and of the nerves supplying it, have, in greater or smaller array, and therefore in varied degree, maintained a diseased digestion of the food, whence a vitiated blood comes thus to be formed. Besides this, more or fewer of the obstructed organs ceasing to pour out their secretions and excretions, the elements of these are retained in the circulating blood, which they further vitiate. Add to this the want of proper elimination of matters from the skin (*to which, in the great majority of instances, no attention whatever has been paid*), and last, not least, the absorption into the blood of the infinite variety of poisonous medicines that have been tried in the years of suffering—and some idea may be formed of the sort of blood which is circulating in the bodies of patients so circumstanced, and the character of the solids deposited from that blood. In fact, the leaden or parchment complexion, the yellow eye, the dry or waxy lip, the foul tongue, fetid breath, diseased secretions and excretions generally, the puffy, morbid fat, and flabby muscles, all testify to the vitiated condition of the vital fluid. Now, supposing that the water prescribed to be drunk by these patients had only for final aim to "thin" the blood, we are at a loss to behold any great mischief in diluting such a mass of semi-poisonous liquid. But when we find the skin becoming florid, the eye clear, the lip red and plump, the tongue clean and moist, the breath sweet, the bowels and kidneys affording healthier excretions, and the muscles hardening, under the operation of water drinking, it is reasonable to suppose that it does something more or something else than "thin" the blood; particularly when the increased consumption of the oxygen of the atmosphere during the exercise of which they take abundantly, is given into the account. And that changes such as these occur in the process of our treatment at this place, may be seen by any one who pleases to ask patients for a comparative statement of their previous and present condition. To account for this, a few physiological data may be given.

The learned LIEBIG informs us that "the two first conditions of animal life are nutritious matters and oxygen introduced into the system,"[*] and that in the varied transformations effected by the varied combinations of the elements of food and oxygen, the food of animal life consists.[†] These transformations are all effected in the blood, derived as it is from the food and the oxygen of the atmosphere.[‡] For the due performance of the vital functions—i.e., transformations—the presence of *water* in the blood is *absolutely necessary*.[§] This is especially shown by the proportion of water in healthy blood, which, according to Lavoisier and Seguin, as quoted by Liebig,[‖] is *eighty per cent.*, as well as by the enormous proportion which it bears in the chemical composition of all the secretions. Hence it is essential that *all* the food be so changed in the stomach as to become equally soluble in water, and thus be capable of entering into the circulation.[¶] Whilst from the food thus changed, two elements, carbon and hydrogen, are derived, these are carried round with the blood, and meet with oxygen introduced at the lungs and through the skin; and, combining with it in those places, carbonic acid gas and the vapour of water are formed and expelled from the body, one part of the oxygen mingling with the carbon to form the water.[**] Now, if sufficient supply of carbon and hydrogen be not taken in the shape of nutriment and drink to meet the supply of oxygen afforded by the atmosphere, death by starvation or chronic disease takes place. Of this, Liebig says:[††]

"The time which is required to cause death by starvation depends on the amount of fat in the body, on the degree of exercise, as in labour and exertion of any kind, on the temperature of the air, and finally, *on the presence or absence of water.* Through the skin and lungs there escapes a certain quantity of water, *and as the presence of water is essential to the continuance of the vital motions, its dissipation hastens death.* Cases have occurred in which a full supply of water being accessible to the sufferer, death has not occurred until after the lapse of twenty days. In one case, life was sustained in this way for a period of sixty days."

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[*] Organic Chemistry in its Applications to Physiology and Pathology, p. 12.

[†] Ibid., p. 9. [‡] Ibid., p. 8.

[§] Ibid., pp. 3, 43, 136, 140, 141, 142, 148, 153 to 159, 180, 181.

[‖] Ibid., p. 13.

[¶] Liebig, pp. 108, 109. [**] Ibid., p. 13. [††] Ibid., p. 27.

This certainly does not look as if the water had *impoverished* the blood. But further: according to the same authority, this same "thinning" water is absolutely *necessary* in chronic disease, at least the want of it is a chief cause of death in it. LIEBIG tells us in the very next paragraph—

"In all chronic diseases death is produced by the same cause as in starvation—viz., the chemical action of the atmosphere. When those substances are wanting whose function in the organism is to support the process of respiration; when the diseased organs are incapable of performing their proper function of producing these substances; when they have lost the power of transforming the food (in which water so materially aids) into that shape in which it may, by entering into combination with the oxygen of the air, protect the system from its influence, then the substance of the organs themselves, the fat of the body, the substance of the muscles, the nerves and the brain, are unavoidably consumed."

From all this we learn that the presence of water in the blood tends to quicken those transformations of the blood in which the act of life essentially consists. Moreover we learn that if, whilst the elements carbon and hydrogen are being freely and rapidly formed from the aliment, the body is placed in such a condition as to contain a good amount of oxygen to combine with them, a vivid degree of vitality is imparted to the entire organism, and the strides of chronic disease and of death are arrested.

Now these are precisely the states brought about by the water-treatment. The very first of its effects is to produce appetite; many patients being actually ashamed of the quantity they eat, or are inclined to eat. Whilst carbon and hydrogen are thus largely formed by blood, a proportionate quantity of oxygen is made to be taken in by means of exercise: for as the number of respirations regulates the quantity of oxygen inspired, and as these are more frequent in exercise, the result is the presence of a large quantity of that vivifying gas to meet and combine with the large quantity of carbon and hydrogen supplied from the aliment, that is, the solid food and water. The results of this more vivid vital state are to remove the obstructions and interruptions of the organs above mentioned, and thus to restore secretions; to produce more rapid transmutations, and thus to renew the previously vitiated blood: and by the gradual substitution of healthier blood, to cause a deposition of healthier solids. And we submit that none of these results give the slightest indication of impoverished blood.

We have entered into these physiological explanations in order to show the laical reader how much and how little he should rely on the loose off-hand assertions of his professional friend, from whom some rationale of the so-called "thinning of the blood" may reasonably be expected. Be that fluid thinned or not, the water cure has the results above mentioned, and we might content ourselves by referring to the signs, in the complexion alone, of those who have tried it, of redder and richer blood circulating where for years it had ceased to circulate, being congested on some internal organs, there causing obstruction of function. To hear the solemn trash vented on this matter of the blood, one might imagine that water were a thing abhorrent to the human organism, and to be drunk only when all drugs had failed, or not even then. Whereas we are told by a high physiological authority, that, "water constitutes four-fifths of the weight of the animal tissues, and without it they are wholly insusceptible of vitality."* And LIEBIG states† "that 6361 parts of anhydrous fibrine (i. e., fibrine deprived of all water), are united with 30,000 parts of water in muscular fibre or in blood." With these two data the laical reader will be the less astonished to hear, from good authority also, that the water actually *assists* in the formation of the *solid* parts of the body. Count RUMFORD announced this long ago,‡ and PEREIRA holds the same opinion.§ ROSTAN likewise remarks, that "water is the principal source of vegetation, itself the source of all animal life, that it acts on the animal both by its admixture with atmospheric air (as in respiration and by the skin), and by its presence in the digestive canal, where it acts directly *by aiding in the renovation and growth of the individual.*"‖ We daily behold the muscles of patients acquiring increased volume and firmness under the operation of the water cure, and the exercise they are enabled to take very soon after commencing it, tells of anything rather than the helplessness that attends impoverished blood and attenuated solids. The first surgeon in Europe, DIEFFENBACH of Berlin, recently stated that, in amputating limbs after accidents, he invariably found the several muscles of those who had been treated by water, and were habitual water drinkers, of a much more vivid red colour, of greater compactness, and more contractile than in any other individuals.

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* MÜLLER, Elements of Physiology, p. 7.

† Organic Chemistry in its Application to Agriculture and Physiology.

‡ Essays, vol. i. p. 191, 5th edition, 1800.

§ Elements of Materia Medica and Therapeutics, vol. i. p. 69.

‖ Cours Elémentaire d'Hygiène, tom. i. p. 288.

But the whole assertion regarding thin blood proceeds on grounds that betray intense ignorance both of physiology and of the water cure. It supposes that the whole water imbibed enters into and remains in the circulating blood *quasi* water; that no chemical transformation of it takes place in the body at all—this is ignorance of physiology. And it supposes that *all* who are treated by water are told to drink the same, and that a large quantity, without discrimination of the individual cases of disease presented—this is ignorance of the water cure. So between the horns of this compound ignorance, and of wilful misrepresentation, we leave the declaimers about the "thinning of the blood."

2. "THE WATER-TREATMENT EXHAUSTS THE ANIMAL HEAT."

From this very absurd proposition, we might, as in the former instance, appeal to the patients who have been treated at Malvern. The great majority of them arrive here with the skin so exquisitely alive to any the smallest decrease of temperature, that, in some cases, we found fires blazing in their rooms in the month of August. The same sensitiveness is testified, and indeed maintained, by the accumulation of flannel, silk, and soft leather, in which they are clothed on their arrival here. How is this to be accounted for? And how is it to be explained that, after a longer or shorter trial of the water cure, these same patients go out in all weathers, in early morning, and at night, throw aside their multiplied under-clothing, and defy rain and snow, and keen frost? We propose, in answer, to turn to the pages of an authority which our medical brethren will scarcely gainsay.

Referring again to the doctrine of LIEBIG, given when addressing ourselves to the question of "thin blood," and which makes the vital activity consist in the transformations of the elements of the food into the blood, this again into the solids and secretions, and these again into blood, containing carbon and hydrogen, to be consumed by the oxygen of the atmosphere—we find in the work of the same learned author, that the source of animal heat is attributed to the same process of consumption of the carbon and hydrogen of the food by the oxygen of the atmosphere. He says:*

"The mutual action between the elements of the food and the oxygen, conveyed by the circulation of the blood to any part of the body, is the source of animal heat."

This being established, let us next ask by what means this heat is maintained under varying circumstances? And let the same author answer:

"In the animal body the food is the fuel; with a proper supply of oxygen we obtain the heat given out during its oxidation or combustion. In winter, when we take exercise in a cold atmosphere, and when, consequently, the amount of inspired oxygen increases, the necessity for food containing carbon and hydrogen increases in the same ratio; and by gratifying the appetite thus excited, *we obtain the most efficient protection against the most piercing cold.* A starving man is soon frozen to death; and every one knows that the animals of prey in the arctic regions far exceed in voracity those of the torrid zone.

"In cold and temperate climates, the air, which incessantly strives to consume the body, urges man to laborious efforts, in order to furnish the means of resistance to its action, while, in hot climates, the necessity of labour to provide food is far less urgent.

"Our clothing is merely an equivalent for a certain amount of food. The more warmly we are clad, the less urgent becomes the appetite for food, because the loss of heat by cooling, and consequently the amount of heat to be supplied by the food, is diminished.

"If we were to go naked, like certain savage tribes, or if in hunting or fishing we were exposed to the same degree of cold as the Samoyedes, we should be able with ease to consume ten pounds of flesh, and perhaps a dozen of tallow candles into the bargain, daily, as warmly-clad travellers have related with astonishment of these people.

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* Organic Chemistry in its Application to Physiology and Pathology, p. 17.

"According to the preceding expositions, the quantity of food is regulated by the number of respirations, by the temperature of the air, and by the amount of heat given off to the surrounding media."*

To apply this. Our "warmly-clad" patients come to Malvern without appetite, and afraid of the slightest cold air. We subject them to the action of cold air, by causing them in due time to throw off their warm clothing; we further subject them to the action of cold water applied to the skin in the shape of baths; and, lo! in a few days they get an appetite! How this comes to pass, let the above-quoted paragraphs say. We defy the whole medical fraternity to disprove the truths they contain.

Well, then, behold the patient with an appetite; in other words, with the capability of supplying carbon and hydrogen abundantly to the blood. Behold him taking exercise, and thus augmenting the number of his respirations; in other words, supplying oxygen to meet the carbon and hydrogen which his appetite affords. Behold, in consequence of the mutual action of these elements, an increased rapidity of supply and waste, of vital activity and chemical combustion, AND THEREFORE AN AUGMENTED AMOUNT OF ANIMAL HEAT.

But it may be said that all this applies only to the operation of external cold, and affords no argument against the assertion, that the *drinking* of cold water abstracts the animal heat. This is true, as far as the mere withdrawal of heat is concerned; but the ultimate effect on the increase of food taken, and of oxygen consumed, and therefore of animal heat generated, still holds. Hear LIEBIG again :—

"The cooling of the body, by whatever cause it may be produced, increases the amount of food necessary. The mere exposure to the open air, in a carriage, or on the deck of a ship, by increasing radiation or vaporization, increases the loss of heat, and compels us to eat more than usual. *The same is true of those who are accustomed to drink large quantities of cold water, which is given off at the temperature of the body*, 98·5°. *It increases the appe-*

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* Op. cit. p. 21.

tite, and persons of weak constitution find it necessary, by continued exercise, to supply to the system the oxygen required to restore the heat abstracted by the cold water."[*]

What can be more confirmatory of the philosophical principles on which the water cure proceeds, than this proposition of so justly distinguished a writer? And every word of it is practically proved on these Malvern hills, where, by exercise in the open air, after the various processes of the treatment and drinking water, the capabilities of taking food, and of resisting cold, are gained for those who heretofore possessed neither.

To hear the absurdities uttered on this subject, one might be led to imagine that the evolution of animal heat was a process carried on to a very scanty degree in the human body, and that the quantity of it generated in the twenty-four hours in an adult man, would be utterly expended on the water of the shallow and hip-baths taken in that period. The non-professional reader will, therefore, be surprised at the following statement, made on accurate experiments undertaken by natural philosophers of the highest character:—

"According to the experiments of DESPRETZ, 1 oz. of carbon evolves, during its combustion, as much heat as would raise the temperature of 105 oz. of water at 32° (the freezing point) to 167°, that is, by 135 degrees; in all, therefore, 105 times 135° = 14207 degrees of heat. Consequently, the 13·9 oz. of carbon, which are daily converted into carbonic acid in the body of an adult, evolve 13·9 + 14207° = 107477·3 degrees of heat. This amount of heat is sufficient to raise the temperature of 1 oz. of water by that number of degrees, or from 32° to 197509·3°; or to cause 136·8 lbs. of water at 32° to boil; or to heat 370 lbs. of water to 98·5° (the temperature of the human body); or to convert into vapour 24 lbs. of water at 98·5°! If we now assume that the quantity of water vaporized through the skin and lungs in twenty-four hours amounts to 48 oz. (3 lbs.), then there will remain, after deducting the necessary amount of heat, 146380·4 degrees of heat, which are dissipated by radiation, by heating the expired air, and in the excrementitious matters."[†]

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[*] Op. cit. p. 24.

[†] LIEBIG. Op. cit. p. 34. The quantity of carbon (13·9 oz.) stated is calculated from the analysis of all the aliment taken in twenty-four hours, by a company of the body-guard of the Grand Duke of Hesse

Why here is heat generated by one individual in twenty-four hours, almost sufficient to boil the water in which he bathes, and that which he drinks! And yet persons calling themselves educated medical practitioners and physiologists talk about the water cure "exhausting the animal heat!"

Should, however, the reader desire to learn the most effectual way of *destroying the power of generating animal heat*, let him pursue the plan which so many shivering patients who come to Malvern have followed. Let him drink spirits and wine, eat condiments, swallow purgatives, and especially mercurials, take a "course of iodine," and as an occasional interlude, lose a little blood, and we stake our reputation that he will shiver to his heart's content, and find himself many degrees lower in the scale of Fahrenheit than cold water, cool air, early rising, and exercise can possibly place him.

3. "THE WATER CURE DESTROYS THE TONE OF THE STOMACH."

Is it the cold of the water imbibed which destroys the tone? How then comes it to be given, by universal consent, in fevers, where the tone of the stomach is already low enough? Is there a physician in these days bold enough to assert that *warm* water destroys the tone of the stomach less than cold? Where is the tone of the stomach in gout? Yet, from HEYDEN[*] downwards, *cold* water is the recognized beverage of gouty persons. Dr. PEREIRA tells us that the drinking cold water "facilitates recovery from epilepsy, hysteria, and fainting, and alleviates gastric pain and spasm;" and further, that "large draughts of cold water have sometimes caused the expulsion of intestinal worms"[†]—effects which, we submit, it could not have produced, had the cold water had the result of

Darmstadt, consisting of eight hundred and fifty-five men. It was composed of beef, pork, potatoes, peas, beans, lentils, saurkrout, green vegetables, bread in soup, salt, onions, leeks, fat, and vinegar; in all containing, after analysis, for each man, 13·9 oz. of carbon daily.

[*] Arthritifugum Magnum; a Physical Discourse on the Wonderful Virtues of Cold Water. London, 1724.

[†] Elements of Materia Medica, and Therapeutics, vol. i. page 32. Published in 1842.

"destroying the tone of the stomach." He also states, that "*ice-cold* water, or even *ice*, when swallowed, causes *contraction* (certainly indicative of *increased* tone) of the gastric blood-vessels, and thereby checks or stops sanguineous exhalation (certainly indicative of *decreased* tone) from the mucous membrane of the stomach;" that on taking ice, or ice-cold water, "temporary contraction of the alimentary canal is produced; that a feeling of warmth follows that of cold in the pit of the stomach, and quickly extends over the whole body (so it does *not* exhaust the animal heat!), accelerating somewhat the circulation, and promoting the secretions of the alimentary canal, of the kidneys and the skin."* Finally, the same elaborate writer says of cold water, that "it is a vital *stimulus*, and is more essential to our existence than aliment." † In all which we are at a loss for any signs of destruction of the stomach's tone.

Is it by dilution of the gastric juice that cold water impairs the tone of the stomach? The last-cited author seems to think the affirmative, when he says—"Water serves at least two important purposes in animal economy; it repairs the loss of the aqueous parts of the blood, caused by the action of the secreting and exhaling organs; and it is a solvent of various alimentary substances, and therefore assists the stomach in the act of digestion, though, *if taken in very large quantities*, it may have an opposite effect, *by diluting the gastric juice*." ‡ Unfortunately for the truth of this proviso, with reference to the water cure, no medical man, practising it as he ought to do, would prescribe cold water to be drunk "in very large quantities" at a meal, nor for two hours at least afterwards; on the contrary, not more than a small tumbler should be taken whilst eating. And, as regards copious drinking of it when the stomach is empty—in the early morning, for instance, when it is especially recommendable—we have the best authority for saying, that *no gastric juice at all is secreted in the stomach, until the natural stimulus of nutritious aliment is applied to its cavity*, § and that therefore no dilution of it can take place, and no diminution of tone could thence be caused.

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* Op. cit. p. 34.

† Ib. pp. 68, 69.

‡ Ib. pp. 68, 69.

§ Case of Alexis St. Martin, in Dr. Beaumont's "*Experiments and Observations on the Gastric Juice and the Physiology of Digestion*, p. 96. Edinburgh, 1838.

Lastly, it is by its bulk that cold water impairs the stomach ? If the six or eight tumblers of water imbibed by a person before breakfast, *all* remained in the stomach unabsorbed, its bulk would probably irritate the stomach to the point of vomiting, and the exhaustion of the stomach subsequent on such effort, frequently repeated, might induce atony of its coats, as repeated vomiting from any cause tends to do. But this cannot take place in the course of the water cure; first, because its practice does not countenance the taking of more than one tumbler at a time, and insists on exercise in the intervals between each; and, secondly, because it is well ascertained that the absorption of water by the stomach is a surprisingly rapid process, "all drinks," according to Dr. BEAUMONT, "being *immediately* absorbed, none remaining on the stomach ten minutes after being swallowed."* We heard a medical practitioner, who had seen a case similar to that of St. Martin (a perforation from the surface of the belly into the cavity of the stomach), say, a short time ago, "that the sucking up of water by the coats of the stomach resembled the manner in which rain is taken up by the burning sands of a desert." And all physiological investigation proves, that the empty stomach has amazing vivacity of function in this particular. For the rest, we are contented to refer again to the words of LIEBIG (at page 433), that "large quantities of cold water increase the appetite;" and to the daily exhibition of this fact in our patients. And we therefore contend, that *that which augments the appetite of the stomach cannot be destructive of its tone.* It were well for mankind, had they no more effectual way of destroying the tone of the stomach than by drinking water.

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4. "THE WATER-CURE PRODUCES DROPSY;" and,

5. "THE WATER-CURE INJURES THE KIDNEYS, BY INDUCING EXCESSIVE ACTION OF THEM.

We place these opinions in juxtaposition, in order that the reader may form some idea of the anilities which mere prejudice is capable of uttering. Here are two states—one supposing a want of action in the kidneys, the other an excess of action in them. How, in the name of logic, can both acknowledge an identical cause? Yet both are gravely asserted to arise from drinking water! Let us endeavour to place those who hold by the retention of the water in the body, and those who assert its too rapid exit therefrom, at ease on both points.

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* Op. cit. p. 99.

Two kinds of dropsy are described by all medical writers on the subject; that which arises from inflammatory, or some analogous action in the seat of the dropsical collection (the chest, belly, or the cells underneath the skin); and that which ensues upon obstruction of the circulation by reason of disease of the heart, the lungs, the liver, the spleen, or some of the large veins of the body. Of late years, it has been shown by BRIGHT,* CHRISTISON,† GREGORY,‡ OSBORNE,§ MARTIN SOLON,|| RAYER,¶ to be connected in some instances with a particular disease of the kidneys, of which we shall by and by say more. With whatever condition, however, of the dropsical part the disease may be allied, one fact is invariable in the history of dropsy—viz., the diminished action of the kidneys, and therefore the diminished quantity of fluid evacuated by them; a diminution of which patients in the water cure, we venture to say, never yet complained. Referring to the dropsy connected with local inflammation, we find the greater number of authors attributing it to suppression of the perspiration, or of any of the natural secretions and discharges, and to the driving in any eruption. Referring also to the dropsy dependent on disease of the heart, lungs, liver, &c., we find all medical writers explaining this by the stoppage of the circulation in consequence of obstructions in those organs, and the subsequent congestion of blood and effusion of its watery parts in some of the cavities. But in all the treatises on this disease, from HIPPOCRATES** downwards, the medical

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* Reports of Medical Cases. London, 1827.

† On Dropsy from Disease of the Kidney. Edin. Med. and Surg. Journal, vol. xxxii. p. 162. 1829.

‡ Edinburgh Med. and Surg. Journal, vol. xxxvi. page 315. 1831.

§ On Dropsies, &c., &c. London, 1835.

|| De l'Albuminurie. Paris, 1838.

¶ Traité des Maladies des Reins, &c. Paris, 1839-40.

** Aphorism. 3 to 7; et Opera, *passim*.

or the non-professional reader will seek in vain for the use, or even the abuse of water as a cause. It is true that many of the older writers tortured their dropsical patients (who are always thirsty) by forbidding liquids ; but every practitioner is now well aware of the absurdity, and even injury of the restriction, which, however, still obtains as correct with very many of the laity. Upon this erroneous and injurious notion, the opinion that "water-drinking causes dropsy," is calculated to play, as they who emit it well know. But would any educated practitioner venture, in a case of dropsy, to act upon such a notion, and debar his patient from as much water as he chose to drink? We opine that he would be pointed at as an ignoramus, and scouted by his brethren for his utter want of scientific and practical knowledge. If, then, the free taking of water be not conducive to the increase of dropsical disease, *when the kidneys and skin are carrying off liquids imperfectly*, how should it produce dropsy *when both the kidneys and skin are acting freely;* nay, carrying off more than the usual quantity of fluids by virtue of the exercise enjoined in the water cure? The proposition carries absurdity on the face of it.

But we further maintain that, in those cases wherein the dropsy is attributable to obstruction of circulation in the liver, spleen, or sweetbread, the copious drinking of water, aided by the other applications of the water cure, is a powerful agent in the *cure* of dropsy. If there be a diseased state which our plan of treatment is more especially calculated to remove, it is to be found in that obstruction of the liver, and other solid organs of digestion, which, in the majority of instances, gives rise to dropsy. Of the removal of this obstruction we have already given the rationale. And inasmuch as, in the case before us, the dropsy is attacked in its source, and the torpid liver, &c., put into action, we have good reason to prefer the water-treatment before that which only aims at stimulating the kidneys by all kinds of irritating diuretics, leaving the whole seat of the mischief in the liver to take its chance, or, possibly, to be deteriorated by those very diuretics (calomel, colchicum, squills, and so forth), applied to the stomach.

This leads us to the consideration of that species of dropsy which is connected with the organic disorder of the kidneys, denominated "granular disease," and described by BRIGHT, CHRISTISON, and others. When it is alleged that the water cure causes disease of the kidneys, we are not aware that particular allusion has been made to this "granular" condition;—very probably they who pronounce the opinion never heard of such a condition. But as medical writers have never yet spoken of any other state of the kidneys as productive of dropsy, we conclude that the disease in question is the one intended to be seen through the haze of prejudicial ignorance which surrounds this opinion. If the authors who have published on this subject are to be relied on (and they comprise the most respectable names in medicine), the causes of the complaint in question are, 1, suppressed action of the skin; 2, drinking of spirituous liquors; 3, the employment of stimulant diuretics; and, 4, courses of mercury. But none of them allude in any way to copious dilution with water as a cause.

With regard to the *suppressed action of the skin*, it can scarcely obtain in the water cure, where the *increased* action of that important surface forms a prominent feature, and wherein sweating is a principal agent. On this last, indeed, Dr. OSBORNE places his greatest reliance in the cure of dropsy;* asserting that, "sweating being accomplished, the disease, if free from complications, never fails to be removed."†

Neither do *spirituous liquors* figure in the water cure, which may, therefore, *quoad hoc*, be declared guiltless of causing renal dropsy. Why do not our medical brethren, who utter warnings about *water* and dropsy, raise their voices on the subject of *spirits* and dropsy? for all the writers above cited speak of spirit-drinking as the most fertile cause of this kind of dropsical disorder, which, according to Dr. BRIGHT, destroys not less than five hundred persons annually alone.

Then as regards the employment of *stimulant diuretics*, they enter not into the simple pharmacopœia of the Water Cure. Dr. OSBORNE states, that these medicines, as squills, cream of tartar, and even the diuretic salts, are not guiltless in contributing to the production of this disease of the kidney; and that by over-stimulating the kidneys, they become the means of stopping the urinary secretion, and inducing the renal disease and its consequences.‡ And Dr.

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* Op. cit. p. 44. † Ib. p. 61. ‡ Ib. p. 34.

GREGORY, in his report of cases,* says, "that the most remarkable diminutions in the urinary secretions took place *after the administration of squills and cream of tartar;*" evidently pointing to their effect in exasperating the malady. Further, in quoting these authors, it is necessary to remark that they speak of the "*stimulant* diuretics," and particularize some of them as above. The laical reader will understand the force of this when he learns that diuretics are classed by physicians into the "aqueous" and the "stimulant," the latter including the saline, the acrid, the oleaginous, &c.† It is not probable that accurate writers should have passed over the "aqueous" diuretics had they been detectable as a source of dropsy from the cause in question; the rather as, besides simple water, these include the infusion of simple herbs and grains, copiously imbibed. So that, taking authority of a high character, that terrible agent, water, does not produce dropsy so frequently as those pleasant medicines, squill, colchicum, &c.

Lastly, a reviewer in the *Edinburgh Medical and Surgical Journal*‡ (supposed to be Professor CHRISTISON), accuses *mercury* of causing diseased kidney leading to dropsy, and alludes to Dr. BLACKWALL's observations to the same effect. He says—"Two decided examples, if not more, we have seen, in which no doubt could be entertained as to the influence of this mineral in producing the morbid degeneration of the kidney. Mercury seems in this case to act very much like other excessive stimulants, and by over-exciting the glandular part of the kidneys, to lay the foundation of the morbid change." Sir ASTLEY COOPER also classes mercury as a not infrequent cause of dropsy of the belly, speaking of it in that agency as "by no means an extraordinary case."§

Still, we have nothing of water in all this; and mercury is assuredly no part of the water cure. The fact is, and educated medical men know it, that when a large quantity of water is introduced into the circulation, it passes off by the skin in the shape of sweat, if external heat be applied; or by the kidneys, if the surface be kept cool, this being a process of filtering only, and unaccompanied by the stimulation which marks the operation of saline and acrid diuretics, whose aim is to *force* the kidneys at the expense of other organs. It requires no depth of reflection to conclude which is the more likely to bring on renal dropsy. We may add, by way of rider, that Dr. COPLAND enumerates "the drastic operation of purgatives" among the causes of dropsy;* but does *not* place copious dilution in the list.

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* Edinburgh Med. and Surg. Journal, *ubi supra.*

† Pereira's Elements of Materia Medica, vol. i. p. 200.

‡ No. cxxviii. p. 196.

§ Lancet, April 23, 1824.

6. "THE WATER CURE CAUSES RHEUMATISM."

If so, the dogma on which Homœopathy is based, and which asserts that the same remedy which cures will cause a disease, is correct. For in no complaint hitherto submitted to the water cure are its curative effects more decided, and even surprising, than in rheumatism, whether acute or chronic. But the *comfortable* prejudices in favour of abundance of flannel, a wilderness of fir, and the atmosphere of ovens, stamps the promulgation of this dread of rheumatism with the only ingenuity that it can fairly claim; for daily and hourly experience leave it without a vestige of foundation. To obtain rheumatism by the joint operation of cold and moisture, two conditions are necessary; first, that the individual should be predisposed by a certain irritative condition of the digestive organs, especially the liver, and of the nervous system; secondly, that evaporation of the moisture from the surface of the body should be unimpeded, and the individual in a state of rest. Place a man with sound digestive organs between damp sheets, covered by dry blankets and counterpane, and let the whole be arranged so as to forbid the passage of air underneath the bedclothes, and it is altogether impossible for him to become rheumatic. In such cases, the warmth of the body quickly transforms the damp of the sheets into vapour, which, being confined about the skin, engenders an atmosphere warm enough to satisfy the most comfort-loving matron in the community. More than this; the consequence is not rheumatism, even when there is the predisposition in the digestive organs; witness stage-coachmen and postboys, who invariably suffer their under-coat to be well soaked with rain before they put on the upper dry one kept in reserve; and who, although given to those ways which irritate the digestives, neither get cold nor rheumatism by this proceeding. The like applies to the well-known habit of the Highland shepherds, of wringing their under-garment out of cold water, and covering all with a dry coat, *as the best means of keeping themselves warm*, when they sleep on the mountain side; yet they are not celebrated for their abstinence from whisky, nor for attacks of rheumatism. All that is required is, that evaporation of the damp clothing by the passage of air should be avoided; experience teaches this, and the reason of it should be evident to every medical man.

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* Dictionary, p. 627. Art. *Dropsy of the Abdomen.*

On the other hand, let a man's stomach and bowels be maintained in a state of irritation by purgatives; let him, more particularly, be in the habit of taking minute or large doses of mercury or iodine, it will be found how readily he takes rheumatism even by exposure to cold air, not to mention the dampness that is its usual concomitant in this island. Yet pack the same man in damp sheets, and keep all but his face hermetically excluded from the air, and though he were brimful of the results of mercury, he runs no more risk (not as much in the ultimate) of becoming rheumatic by it than if he were in a bed heated by half a dozen warming-pans. It is mere idleness to deny this without experience; *we* have *seen* the fact scores of times; we have never seen rheumatism ensue on such treatment; and we take leave to doubt whether the persons with this rheumatic crotchet in their heads have ever tried or seen tried the wet sheet, or any other portion of the water cure. Would they desire to have other medical authority than ours for the harmlessness of cold water and damp clothes? Dr. HEBERDEN, the first physician of his day, says:—

"In England, few make any doubt of the great danger attending wet rooms and damp clothes or beds. Is this opinion founded upon experience *which has been suffered to grow up and get strength merely for want of being examined?* If we inquire into the arguments in favour of this notion, we shall hardly find any other than the random conjectures of the sick about the cause of their illness, or than their artfully substituting this origin of it instead of some other, which they are unwilling to own. I hardly know a distemper, of which at different times I have not been told that it was occasioned by lying in a damp bed or by sitting in a wet room; and *yet I do not know any one which will certainly be produced by these causes;* and people frequently expose themselves to such causes without suffering any ill effects. . . . It is a common practice in certain disorders to go to bed at night with the legs or arms wrapped in linen cloth soaked in Malvern water; so that the sheets will be in many places as wet as they can be; *and I have known these patients and their bed-fellows receive no harm from a continuance of this practice for many months.* Nor can it be said that the Malvern water is more innocent than other water might be, on account of any ingredients with which it is impregnated; *for the Malvern water is purer than that of any other springs in England, which I ever examined or heard of.*

"Is it the coldness of wet linen which is feared? but shirts and sheets, colder than any unfrozen water can be, are safely worn and lain in by many persons, who, during a hard frost, neither warm their beds nor their shirts. Or does the danger lie in the dampness? But then how comes it to pass that a warm or cold bath and long fomentations can be used without the destruction of those that use them? Or is it from both together? Yet we have long heard of the thickness and continuance of the cold fogs in the north-west of England; but have never yet been told of any certain ill effect which they have upon those who live in them."*

7. "THE CRISIS INDUCED BY THE WATER CURE IS DANGEROUS."

A writer in the *Quarterly Review* for December, 1842, clubs this "word of fear" with the last named, prophesying that "the water cure will flourish until some person of note is crippled by a rheumatic fever or dead from a carbuncle." The employment of this term "carbuncle" as indicative of *the* crisis, lays bare either the gross ignorance of the writer on the subject of the water cure, since he gives it as the *only* critical result, or the dishonesty of his purpose in thus attempting to fix a formidable name on the agglomeration of two or three simple boils. Let us inquire what "carbuncle" really is, and what the water boil really is.

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* Medical Transactions, vol. ii.

"Carbuncle," says Dr. Copland,[*] "has very generally been confounded with malignant pustule." This is so true, that, putting aside non-professional persons, who evidently attach the idea of mortification, &c., to the term (on which account we presume the reviewer employs it), we venture to say that seven out of ten medical men, if asked to define carbuncle, would call it "a *malignant* tumour." The author just cited offers a distinction between carbuncle and common boil by representing the latter as "having only a single opening, being smaller and more conical, and by several appearing in succession." Now, although the critical boil of the water cure sometimes (by no means always, nor even in the majority of instances) has more openings than one, and is not so conical nor narrow-based as a single ordinary boil, yet it agrees with the account of this last in appearing in more than one place. To reconcile the discrepancy, and to fix the true character of the water boil, we beg to refer, *first*, to the opinions of Dupuytren[†] and Rayer,[‡] who describe carbuncle as "a tumour formed by the conglomeration and confluence of several boils:" *secondly*, to the facts announced by Dr. Craigie[§]—viz., carbuncle "is accompanied by sickness, languor, restlessness, and sleeplessness; that the patient generally suffers much headache and thirst, and his tongue is loaded with a thick, brown, dry fur; that he generally loathes food, and in some cases vomits more than once; that he raves, faints, &c., &c.; and *lastly*, to the predisposing causes of carbuncle, which are laid down by Dr. Copland,[||] as consisting in "high, rich, or gross living with insufficient exercise, a full, gross habit of body, and neglect of personal cleanliness"—causes which, he says, "not only predispose, but even more directly produce it."

It so happens that the water-cure boil is never accompanied by the constitutional symptoms above recited by Craigie; the patient loses neither sleep nor appetite; there is no disorder of the tongue, nor, by any chance, any vomiting, and delirium and fainting are circumstances although unknown in its history. If any of the patients treated by us at Malvern, who have had the crisis of boils, will assert that any one, or all of these symptoms of carbuncle, usually so called, accompanied such crisis in their persons, we are ready to give up the point, and allow that the water-cure boil is of the genuine carbuncle species, and of a dangerous character. In the meantime, as the like cause generally produces the like effect, and as the boil induced by our treatment does not produce the same symptoms as the "carbuncle" of authors, we are justified in denouncing the dishonest motive displayed in attaching that much-feared name to it.

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[*] Dictionary of Practical Medicine, p. 1056. Art. *Furuncular Diseases.*

[†] Lectures in the *Lancette Française* for March, 1833.

[‡] Theoretical and Practical Treatise on Diseases of the Skin, translated by R. Willis, p. 549.

[§] Elements and Practice of Physic, vol. i. p. 640.

[||] Loc. cit.

Further, it so happens that the water-cure boil, so far from being connected with "high, rich, and gross living, with insufficient exercise, with gross habit of body, or with neglect of personal cleanliness," as is the case with the "carbuncle" of authors, appears, after strict but nutritious dieting, abundant exercise, diminution of morbid fulness of habit, and most assuredly, after no neglect of personal cleanliness, if water applied in all manners can clean the human skin, or purify the human frame. The identity of true carbuncle with the water boil thus fails in the comparison of causes, as well as of symptomatic effects; neither being traceable to the like causes, nor marked by the like results. Where, then, is the *honest* motive in maintaining their identity?

The only point in which they agree is the formation of more than one opening, in which case they also agree in the more extended base and less conical shape than in an ordinary boil. But as we said, this is an *occasional* occurrence only; in very many instances, none but single boils are produced, to which it would be as fair to attach the name and attributes of "carbuncle," as to the larger species alluded to. What then is the genuine water boil, about which such a hubbub is made? It is a conglomeration of several simple boils, and in so far, according to DUPUYTREN'S and RAYER'S definition, a carbuncle; but inasmuch as these are generated in, and are indeed the signals of, a body cleansed of its grossness and impurities after weeks or months of wholesome diet, exercise, and watery applications, and not of a body in all the flush of dietetic iniquities, these congregated boils have neither the carbuncular discharge, nor are accompanied by the severe and dangerous constitutional symptoms attendant on the genuine carbuncular inflammation. Inasmuch, too, as the danger of an external diseased point is in exact proportion with the condition of the stomach, and other vital organs within, and these are invariably put into order *before* the appearance of a crisis of boils, the reason wherefore these latter induce no constitutional derangement, and are therefore attended with no danger, whilst the "carbuncle" of authors is, will be clear to the reader. The water boil *of the most extensive kind* is only a "carbuncle" in the arrangement of the several boils which form it; in all other particulars it is no more a carbuncle than an ephemeral pimple on the nose is. Nor is there any reason why persons, great or small, should be "dead from it," as the sapient Quarterly reviewer somewhat gleefully anticipates.

Let it be understood, however, that we by no means class ourselves with those practisers of the water cure who appear to consider *a crisis of boils* essential, and who, therefore, are much given to stimulate the system without precise measurement of its capabilities. Let it be further understood, that were we bent upon such coarse practice, there is scarcely more than one case in twenty in which it is *possible* to induce the crisis in question. Of upwards of five hundred patients who have been under treatment at Malvern, not more than twenty-two have had an eruption of boils—large, small, or conglomerated. But we can truthfully aver, that not one of these was deprived of an hour's sleep, nor debarred the usual exercise and diet for a single day; and, as we said before, there is no reason why they should be, if sufficient measurement of the constitutional powers of the individual be made throughout the progress of the case, and common sense with simple means takes the place of mystifying practice with complex means, when boils make their appearance.

But how does it happen that the public have only boils and "carbuncles" held up in *terrorem*—that species of crisis which is the most *rarely* obtained? We think this question has been answered in the preceding pages. Yet it were well that the reader should further learn that other crises exist to which neither the formidable prestige nor name of "carbuncle" can, even by perversion, be appended.

There is the *simple efflorescence* of the skin, which is apt to occur in females.

There is also a *scattered and itching eruption* of pimples scarcely above the level of the skin, which is not an infrequent termination of nervous cases.

There is the crisis of *an attack of fever* of a few days' duration, a very desirable ending of inveterate hypochondriasis.

There is the *critical sweating*, and the *exudation of glutinous acid, and sometimes fetid matter;* and there is a crisis of *diarrhœa.*

Any of these is much more frequently met with, in the treatment of chronic disease, than the boils, the appearance of which depends quite as much on the constitution of the individual as on the appliances of the water cure; for, as we have said, in some constitutions it is impossible, do what one will, to produce this last-named species of crisis.

The principles and the facts of the crisis may be thus summed up:—

Whenever an organ or series of organs, in the state of morbid excitement, which is present in acute and chronic disease, is placed, by art, in a condition to cast off that excitement, the act is announced by a change in some other organ, or series of organs.

This change is a crisis.

The nature and amount of this change, as well as of the organs in which it takes place, depend on the constitution of the individual, the nature and amount of the means employed, and the part to which they are applied.

But as this change never takes place until the organ first diseased has cast off its morbid excitement, the change alluded to, *i.e.*, the crisis, does not itself relieve the former, but is a signal that it has relieved itself; in the same manner that tears do not bring relief to the mind, but are a sign that relief has been brought. It is for this reason that a crisis of some sort is desirable; it is an evidence of good having been effected.

Still as, after all, the crisis is itself a morbid state, it is desirable to produce it on some organ not immediately and strongly connected with the central-vital parts—the stomach and bowels, brain, &c.

For the same reason, a crisis appearing, it is unnecessary and imprudent to urge the means with the view of increasing its amount. It is a sign of relief, and should be accepted as such simply.

Now, the processes of the Water Cure place the primarily diseased parts in a state to cast off their excitement; they further tend to make the skin (an organ not immediately involving the great central organs) the recipient of that morbid excitement; and it remains for the practitioner to regulate the amount of this new excitement or irritation, not suffering boils, eruption, sweat, &c., to tax the powers of the patient beyond the requirements of the case.

When the malady consists simply in the retention of some evacuation, and is not of such standing as to have vitiated the circulating blood, the restoration of the evacuation is in itself a critical act, and no change in any other organ is likely or desirable. The early stages of constipated bowels, of retained monthly flow, or of suppressed perspiration, come under this category.

When also the organic constitution of the individual is of a vivid character, and the disease of the internal organ of comparatively short duration, this last is found not unfrequently to throw itself on some other internal organ which does not so much involve the centre of life; then is there an *internal crisis.* This has been instanced in the appearance of loose bowels after irritated stomach and liver, which being more important parts, have their disease carried off by the lower bowel, a part of infinitely less importance to the individual's life. The same applies to the pouring off by the kidneys of acid and saline matters, as sometimes is the case.

Thus the crisis effected by the Water Cure occurs either on the skin, the lower bowel, or the kidneys—the parts which Nature, when she is allowed to terminate disease by her own efforts, chooses for the same purpose. In doing this, the practitioner of the Water Cure only follows Nature; but to hear the hue and cry about the crisis, one might imagine such an act had never been perpetrated by Nature, or assisted by Art, before the time when Priessnitz developed his mode of treatment. Yet it would perhaps be difficult to find a subject in the whole range of medicine which has engaged the attention of so many eminent medical writers, from HIPPOCRATES,* to CULLEN,† RICHTER,‡

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* Opera ed. Vander Linden, t. i. *et passim.*

† Works by Thompson, v. i. p. 593.

‡ Die Specielle Therapie, b. i. p. 57.

Frank,[*] Hildenbrand,[†] Kreyssig,[‡] who all insist on the importance of acting upon the broad hint given by Nature for her own relief. And the crises enumerated by all authors are precisely those we have alluded to, not excepting the terrible *boils* which our medical brethren would fain make the world believe had never been heard of.

II.

PROPOSITIONS ON THE PRINCIPLES AND PRACTICE OF THE WATER CURE.

I. A series of unnatural symptoms constitutes a disease.

II. This disease is referable to a morbid condition of some of the textures of the body.

III. All disease is originally acute; that is to say, the symptoms are more or less rapid and pressing in their character, and more or less characterized by fever.

IV. Acute disease is the effort of the morbid organ or organs to throw off their disorder upon some less important organ or organs. Thus, acute inflammation of the liver, stomach, or lungs, causes fever; that is, an effort to throw the mischief on the skin, the bowels, or the kidneys.

V. If, from the great extent of the mischief to be thrown off, and the feeble constitution, acquired or natural, of the individual, this effort is not successful, the body dies from exhaustion.

VI. If this effort be only partially successful, more or less of the internal mischief remains, but gives rise to symptoms of a less rapid and pressing and more permanent character. These symptoms then constitute a chronic disease.

VII. Except in the case of accidents to the limbs, we know of no disease which is not essentially internal. Skin diseases are invariably connected with disease of some internal organs, especially the stomach and bowels—and are regulated in their character and intensity thereby. This is so true, that where there is a skin disease, the crisis effected by the water cure invariably takes place on the spot where it exists.

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[*] De Curandis Hominum Morbis, v. i. p. 56.

[†] Institutiones practico-medicæ, v. i. p. 66.

[‡] Encyclopäd, Wörterbuch der Medecin,Wissenschaften, b. 8, p.646.

VIII. *Acute disease*, then, is the violent effort of internal and vital organs to cast their mischief on external and less important organs.

IX. *Chronic disease* is the enfeebled effort of the same organs to the same end.

X. But as, from the diminished power of the constitution, this is always ineffectual, the morbid state of the organs tends constantly towards disorganization, or what is called *organic disease*. This is more certainly the case, if the original causes of the malady are at work.

XI. Disease, therefore, is *curable* when the power of the system is sufficiently strong to throw the morbid action from a more to a less important organ.

XII. Disease is *incurable* when the power in question is insufficient for the last-named purpose; and when it has become organic; that is, when a change of structure has taken place.

XIII. From these premises it follows, that the aim of scientific treatment should be to aid the development of the power of the system, and its efforts to rid its vital parts of mischief.

XIV. That mischief invariably consists in the retention of an unnatural quantity of blood in them, to the detriment of other parts of the organism—a retention commonly known by the terms *acute inflammation*, *chronic inflammation*, and *congestion*.

XV. In endeavouring to develope the powers of the system, the dissipation of this inflammation or congestion must be constantly kept in view, as the end of which the constitutional efforts are the means.

XVI. But as the circulation of the blood everywhere is under the influence of the system of nerves, the power and efforts of these last are essentially to be strengthened, in order to dissipate the inflammation or congestion referred to.

XVII. Curative treatment is therefore made through the instrumentality of the nervous system.

XVIII. Violent and sudden stimulation of the nervous system of the internal organs is invariably followed by exhaustion and increased inflammation and congestion.

Hence the impropriety of alcoholic and medicinal stimulants.

XIX. But the gradual and judiciously-regulated stimulation of the nervous system, according to the organic powers, conduces to the *development* and *maintenance* of its strength.

XX. This stimulation is the more steady and certain in its results the more universally it is applied to the *entire* nervous system.

XXI. To the external skin, therefore, and to the internal skin (as represented by all the lining membranes of the lungs and digestive organs), this stimulation should be applied, those parts containing the largest portion of the nervous system spread through them.

XXII. *Pure air* applied to the lungs, *proper diet*, and water applied to the digestive organs, and *water* applied to the external skin, fulfil this intention of stimulation and strengthening most effectually.

XXIII. Further: as that portion of the nervous system (the brain and spinal cord) in which the will resides, requires the development of its powers, *exercise* of the limbs is requisite, the stimulation of the air, diet, and water, aiding thereto.

XXIV. PURE WATER, PURE AIR, PROPER DIET, AND REGULATED EXERCISE, ARE THE GREAT AGENTS IN EFFECTING THE CURE OF DISEASE BY AIDING THE NATURAL EFFORTS OF THE BODY, THROUGH THE INSTRUMENTALITY OF THE NERVOUS SYSTEM.

XXV. IN THE DUE APPORTIONMENT OF THESE AGENTS, ACCORDING TO THE POWERS OF THE CONSTITUTION AND THE PHASES OF DISEASE, AS ASCERTAINED BY MINUTE MEDICAL EXAMINATION, CONSISTS THE SCIENTIFIC AND THE SAFE PRACTICE OF THE WATER CURE.

XXVI. As the strengthening of the system by the regulated stimulating of the nervous system is the means, so the throwing off disease by more important on less important organs by that acquired strength, is the end of that practice.

XXVII. During the efforts of the system thus aroused for so beneficial an end, if agents are employed which divert those efforts and tend to centre stimulus on the more important organs, augmented mischief is the certain result. Such agents are to be found in alcoholic and medicinal stimulants, applied to the internal skin and nerves; in hot and impure air applied to the external skin and nerves; and in exciting and factitious pleasures and anxious cares applied to the great centre of the nerves—the brain.

XXVIII. These and the *mal-apportionment* of the stimulation included in water, air, diet, and exercise, give rise to the only "Dangers of the Water Cure."

XXIX. The proper apportionment of the stimulation in question, originates and maintains a steady effort of the system to save its vital parts, at the expense of parts which implicate life less immediately.

XXX. The result of this effort is shown in one of the following ways: 1, The re-establishment of obstructed and suppressed secretions; 2, In the elimination of diseased matters through the bowels, kidneys, or skin; 3, In the formation of a critical action of some sort on the skin.*

XXXI. Such result constitutes the Crisis of the Water Cure.

XXXII. The Crisis being the result of the extrinsic efforts of the vital organs, is to be viewed as the *signal* of their relief, not as the *instrument* of their relief.

XXXIII. Still, as, during the crisis, the tendency from the internal to the external organs is most strong, it is more than ever necessary to avoid the causes which act in diverting this tendency, and in reconcentrating the mischief on the internal parts.

XXXIV. At the same time the tendency in point being then strongly established, it is not necessary to stimulate the system further in that direction, and all treatment except that which allays irritation accordingly ceases.

XXXV. A crisis being the evidence of cure of the internal disease, *no recurrence of the latter is to be apprehended, unless the morbid causes are reapplied.*

XXXVI. It is, however, possible, and in a great number of cases happens, that complete recovery from disease is effected by a slow progress, without any perceptible evidence of a crisis, either external or internal.

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* For the various kinds of critical action, see what has been above stated on the subject of the crises of the Water Cure.

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